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UNITED STATES NAVAL INSTITUTE PROCEEDINGS

Vol. 53 AUGUST, 1927 No. 294

Contents

Capital Ship Replacements.—Livingston - - - - - - 841
A Suggested Base for the Scouting Fleet.—Hunter - - - 843
When the Navy Railroaded in China.—Clark - - - - 846
Some Strategical Aspects of Radio.—Rochester - - - - 853
An Officer Detail System.—Kays - - - - - - - - 858
Distance Graph for Light on Horizon.—Rude - - - - 860
World War Analogies Fifty Years Before.—Beauregard - - 862
The Sacred Calabash.—Rodman - - - - - - - - 867
Discussion - - - - - - - - - - - - 873
Professional Notes - - - - - - - - - - - 877
Notes on International Affairs - - - - - - - - 893
Book Reviews - - - - - - - - - - - - 899
The Navy in Hawaii.—Taylor - - - - - - - - - 907
Secretary's Notes - - - - - - - - - - - 925

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Lieut. Rutledge Irvine, U.S.N.

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LONG ISLAND CITY **NEW YORK**

August
Vol. No. 53, No. 8

Contents

1927
Whole No. 294

CAPITAL SHIP REPLACEMENTS
By Brockholst Livingston 841

A SUGGESTED BASE FOR THE SCOUTING FLEET
By Lieutenant Commander Harold O'D. Hunter, U. S. Navy 843

WHEN THE NAVY RAILROADED IN CHINA
By Rear Admiral George A. Clark, U. S. Navy (Retired) 846

SOME STRATEGICAL ASPECTS OF RADIO
By Lieutenant Harry A. Rochester, U. S. Navy 853

AN OFFICER DETAIL SYSTEM
By Commander H. E. Kays, U. S. Navy 858

DISTANCE GRAPH FOR LIGHT ON HORIZON
By G. T. Rude, U. S. Coast and Geodetic Survey 860

WORLD WAR ANALOGIES FIFTY YEARS BEFORE
By Commander A. T. Beauregard, U. S. Navy 862

THE SACRED CALABASH
By Rear Admiral Hugh Rodman, U. S. Navy (Retired) 867

DISCUSSION 873

PROFESSIONAL NOTES 877

NOTES ON INTERNATIONAL AFFAIRS 893

BOOK REVIEWS 899

THE NAVY IN HAWAII
By Albert Pierce Taylor 907

SECRETARY'S NOTES 925

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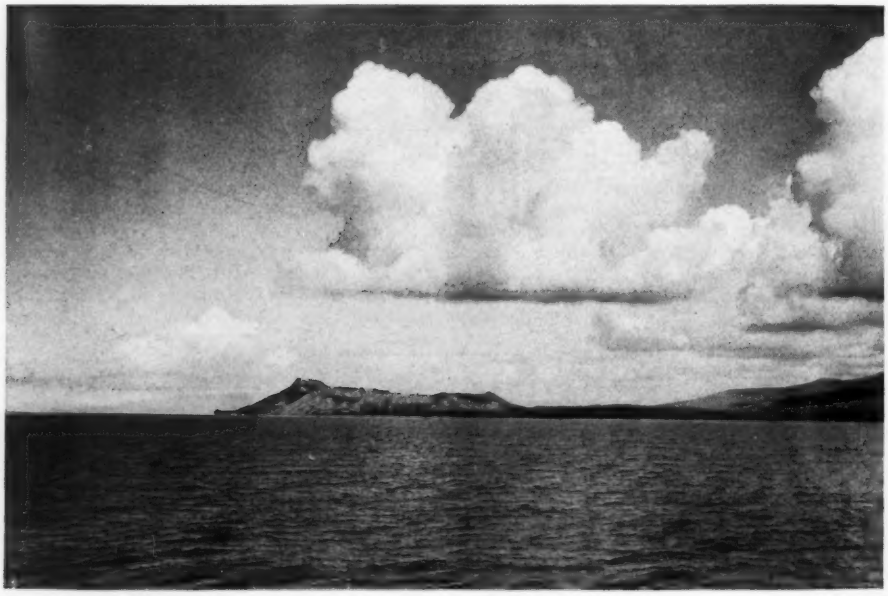
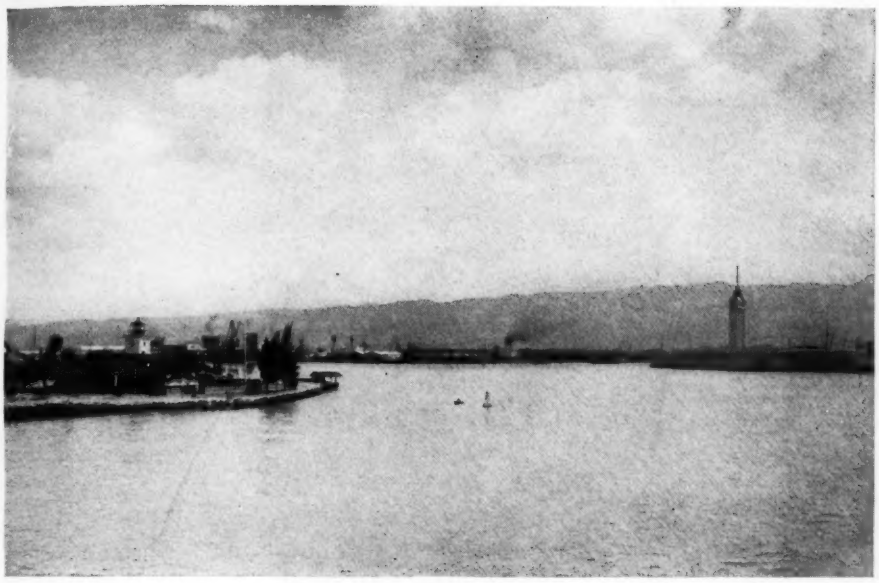
MOLOKAI—THE FIRST OF THE HAWAIIAN ISLANDS TO BE SEEN BY THE VOYAGER FROM SAN FRANCISCO. A LARGE LEPER COLONY IS ON THE ISLAND.



DIAMOND HEAD, OAHU

After rounding this point the voyager will see Waikiki Beach on the right hand and Honolulu in the distance on the starboard bow.

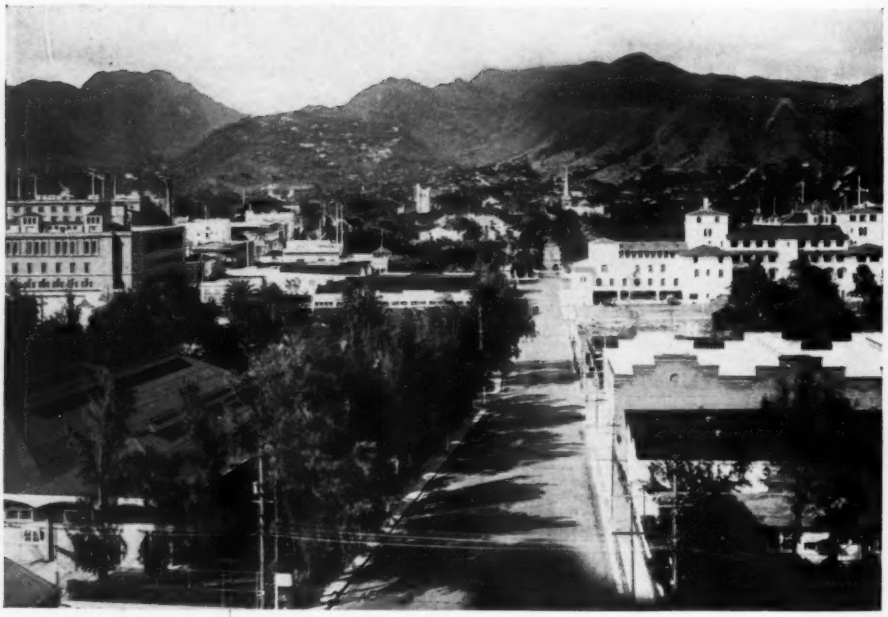
[The pictures on pages VI to XXXII inclusive are by courtesy of Tai Sing Loo, Honolulu, and are not to be reproduced without permission.]



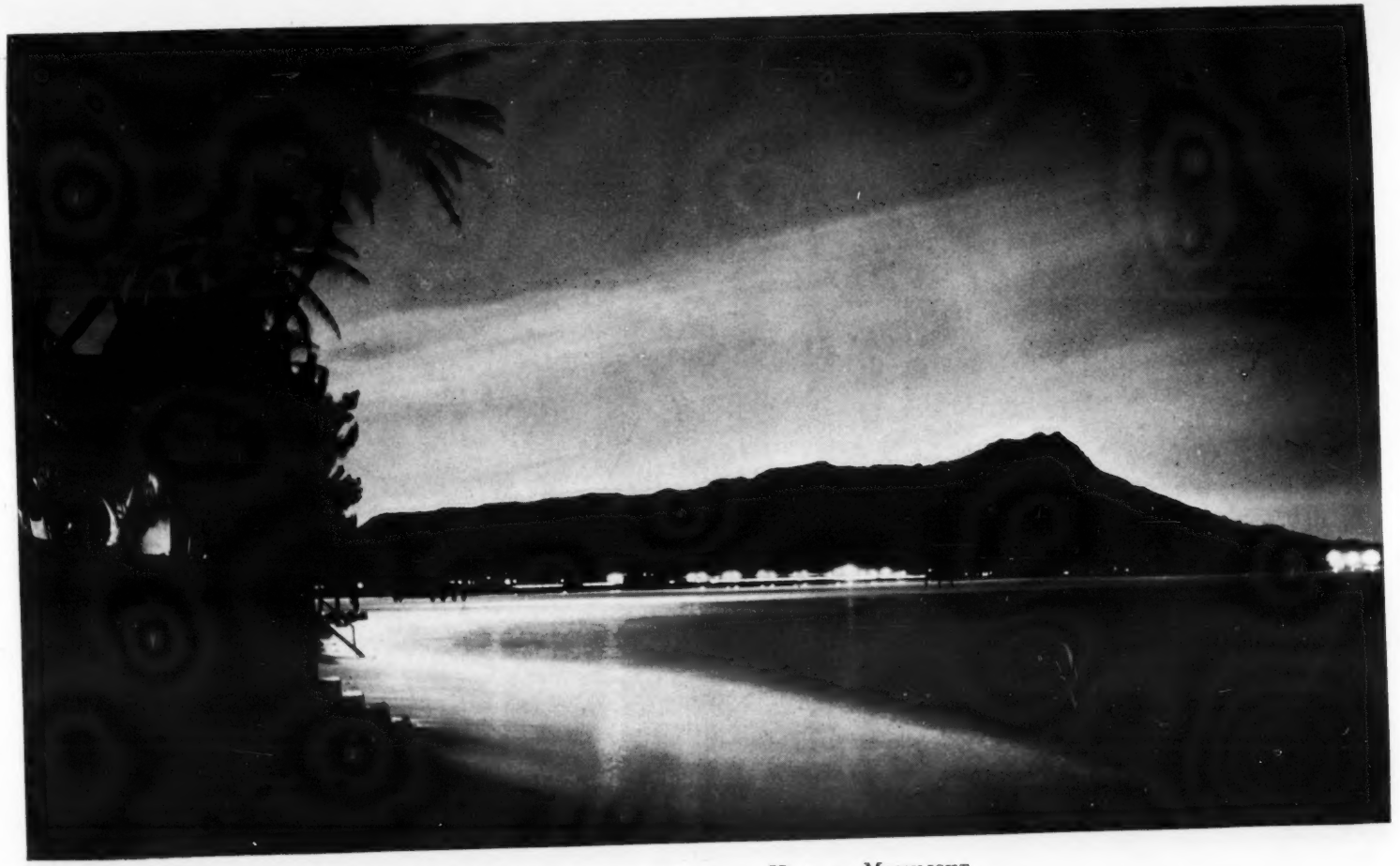
ENTRANCE TO HONOLULU HARBOR
The channel is through a White Coral reef

ALOHA TOWER WHARF—HONOLULU HARBOR

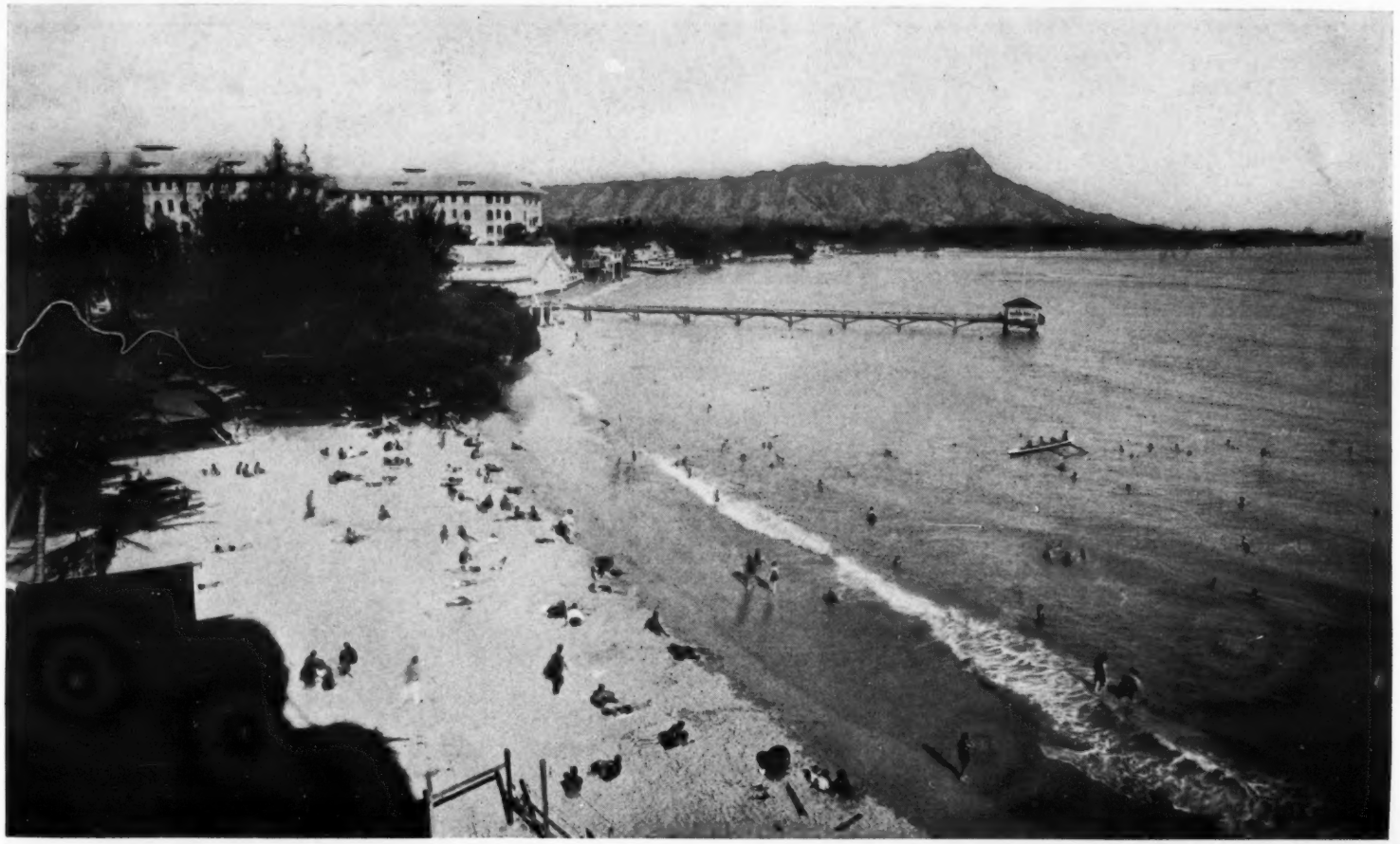
HONOLULU LOOKING SOUTH TOWARD THE SEA



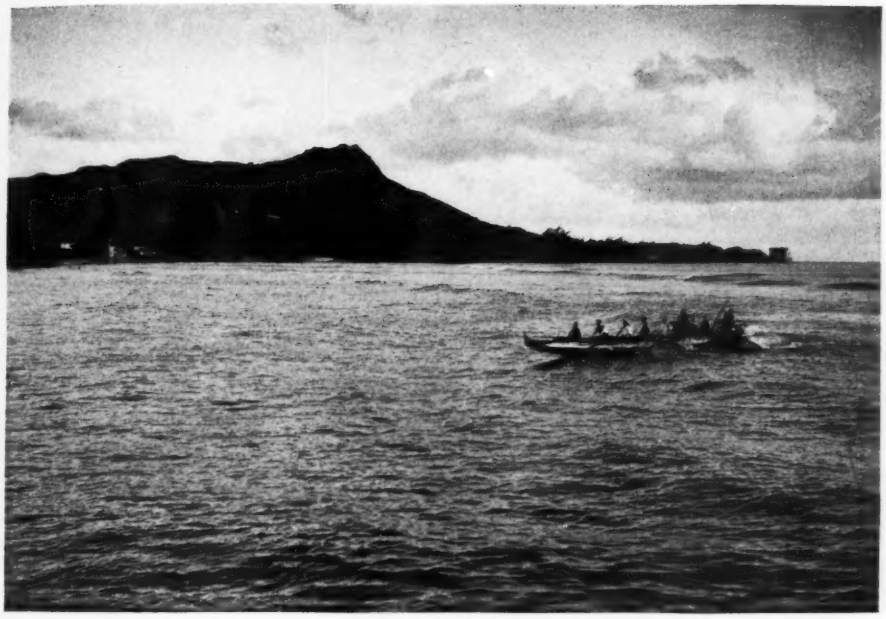
HONOLULU—LOOKING TOWARD THE MOUNTAINS



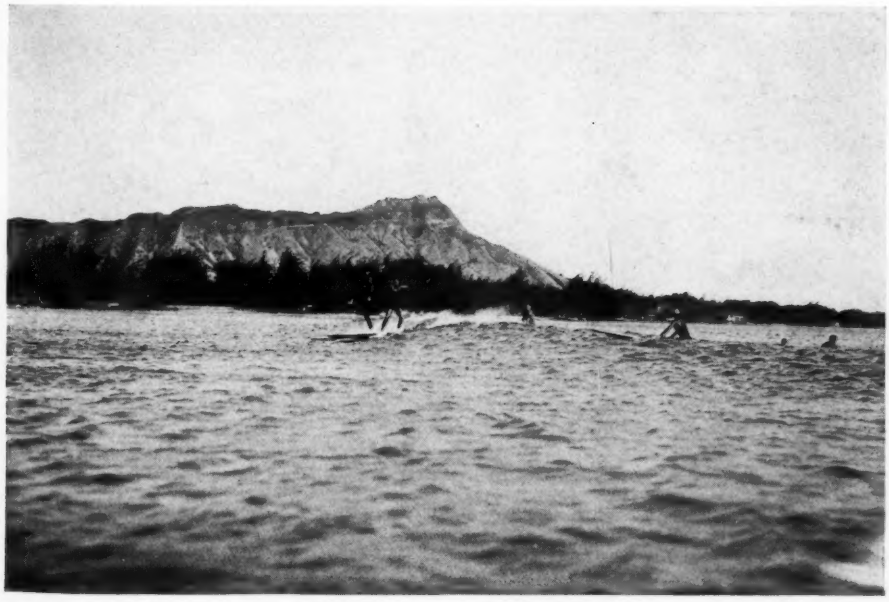
Waikiki Beach and Diamond Head by Moonlight



ON THE BEACH AT WAIKIKI
Diamond Head in background



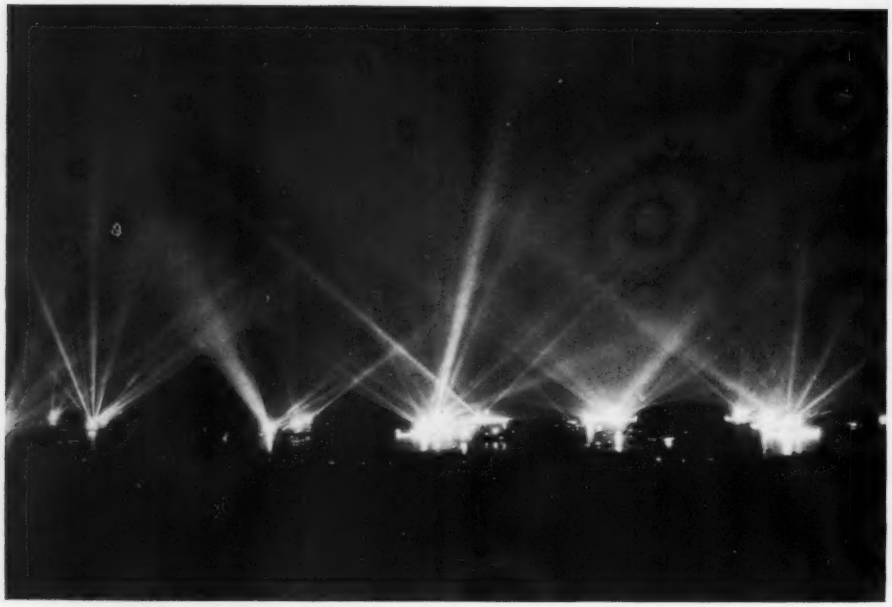
SURF RIDING—READY FOR THE INCOMING WAVE



GOING IN ON THE CREST OF THE WAVES

ON THE BEACH AT WAIKIKI
Diamond Head in background

NIGHT ILLUMINATION OF THE U. S. FLEET ANCHORED OFF THE LAHAINA ROADS, MAUI

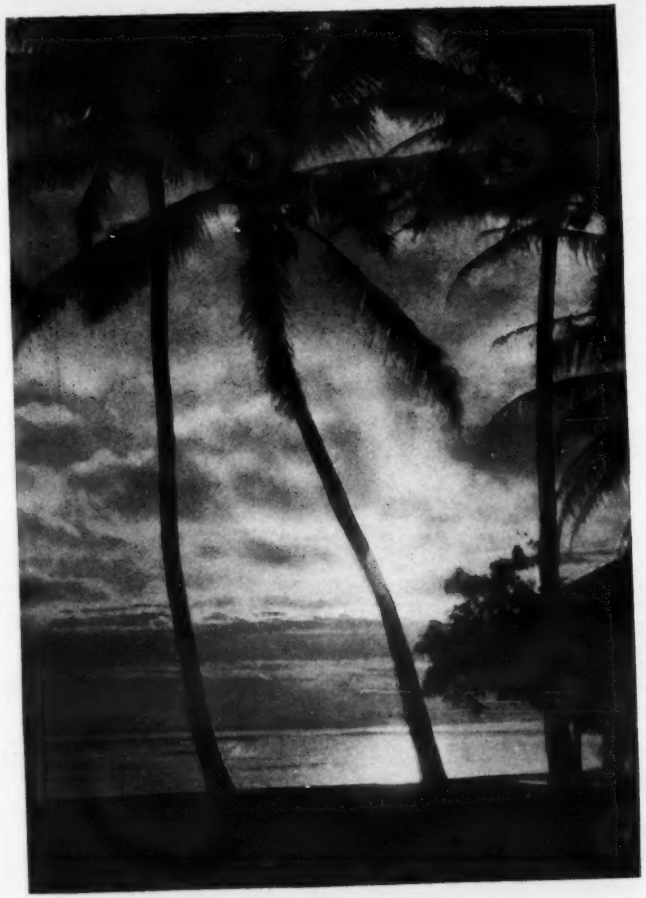


NIGHT ILLUMINATION OF THE U. S. FLEET OFF HONOLULU HARBOR, 1925

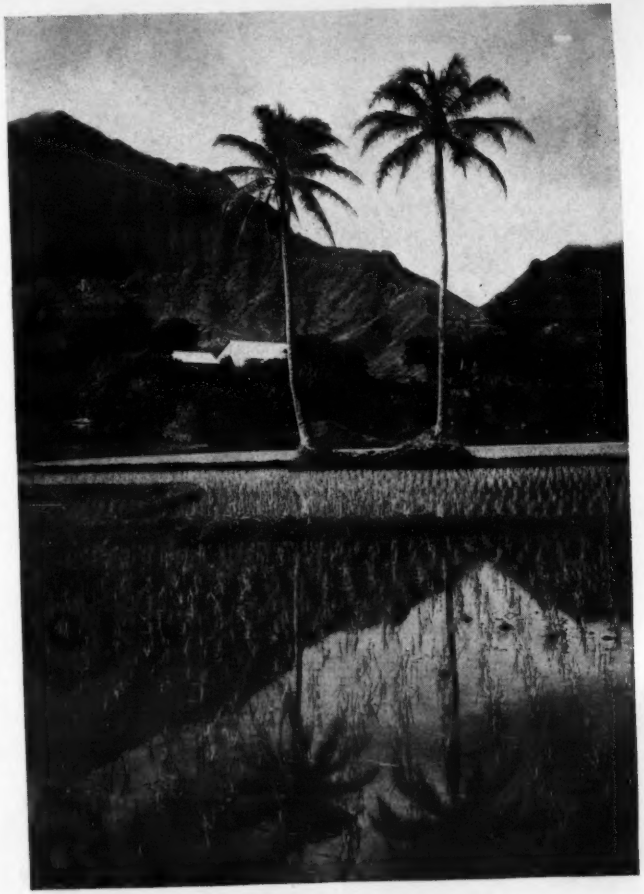
U. S. Fleet Off Lahaina Roads, Maui

SUNSET—LAHAINA ROADS, MAUI
U. S. Fleet anchored at Lahaina Roads.

SUNSET—LAHAINA ROADS, MAUI
U. S. Fleet anchored at Lahaina Roads.



SUNSET—WAIKIKI, HAWAIIAN ISLANDS



THE TWIN PALMS AND RICE FIELDS, KAILUA, OAHU

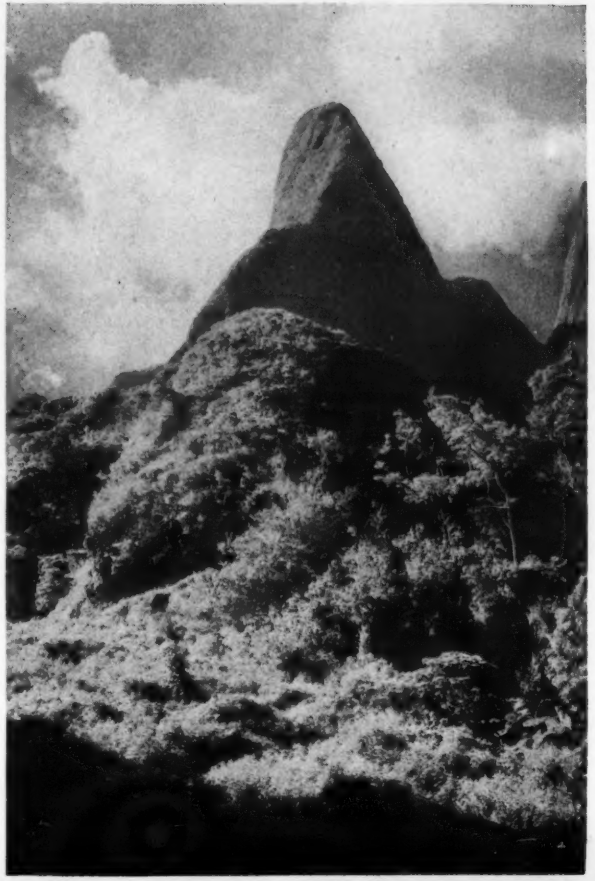
PINEAPPLE FIELDS, HAWAIIAN ISLANDS

HONAPE GULCH—RICE FIELDS—KAUAI

HULU DANCERS, HAWAIIAN ISLANDS

HULU DANCERS, HAWAIIAN ISLANDS

ROYAL HAWAIIAN PALMS
Drive at Pimahau College



THE "NEEDLES"
"The Yosemite of Hawaii"

FERNS—HAWAIIAN ISLANDS

ROYAL HAWAIIAN PALMS
Drive at Pimahau College

THE NEEDLES
"The Yosemite of Hawaii"

SUNSET ON THE BEACH AT WAIKIKI

KAENAE POINT, OAHU

HAIRPIN TURN ON WAY TO THE PALI, KAMEHAMEHA HIGHWAY
This highway is concrete and runs around Oahu, ninety miles in length.

AT THE TOP OF PALI

The wind always blows a gale here. The American sailors have their hats in their hands and their large-bottomed trousers are bellowed out to the wind. It was over this cliff that Kamehameha the Great drove the remnants of the army of the Oahu chiefs when he conquered the island.

Also Courtesy of Mrs. C. H. McMorris

"THE FLIGHT OF MADAME PELE." THIS PICTURE OF THE LAVA AT THE VOLCANO OF KILAUEA, HAWAII, WAS TAKEN AT NIGHT

"Myriads of thread-like filaments of lava resembling twisted hair are floating in the air or deposited here and there, the products of the volcano fires—a product similar to blown glass. This is known as "Pele's hair," Pele being the mythical fire goddess of the Hawaiian volcanoes.

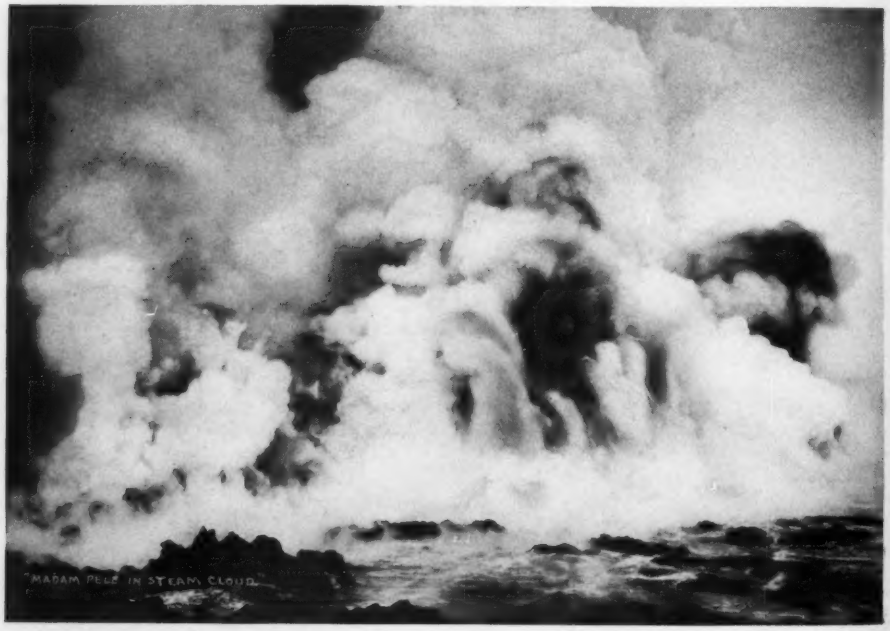
"THE FLIGHT OF MADAME PELE." THIS PICTURE OF THE [illegible]

"Myriads of thread-like filaments of lava resembling twisted hair are floating in the air or deposited here and there, the products of the volcano fires—a product similar to blown glass. This is known as "Pele's hair," Pele being the mythical fire goddess of the Hawaiian volcanoes.

Also courtesy of Mrs. C. H. McMorris

"THE FLIGHT OF THE CROWN PRINCE," "PELE'S HAIR," VOLCANO OF KILAUEA, HAWAII, PHOTOGRAPHED AT NIGHT.

Destruction of Water Tanks, Hoopuloa, by Advancing Streams of Lava from the Volcano Mauna Loa

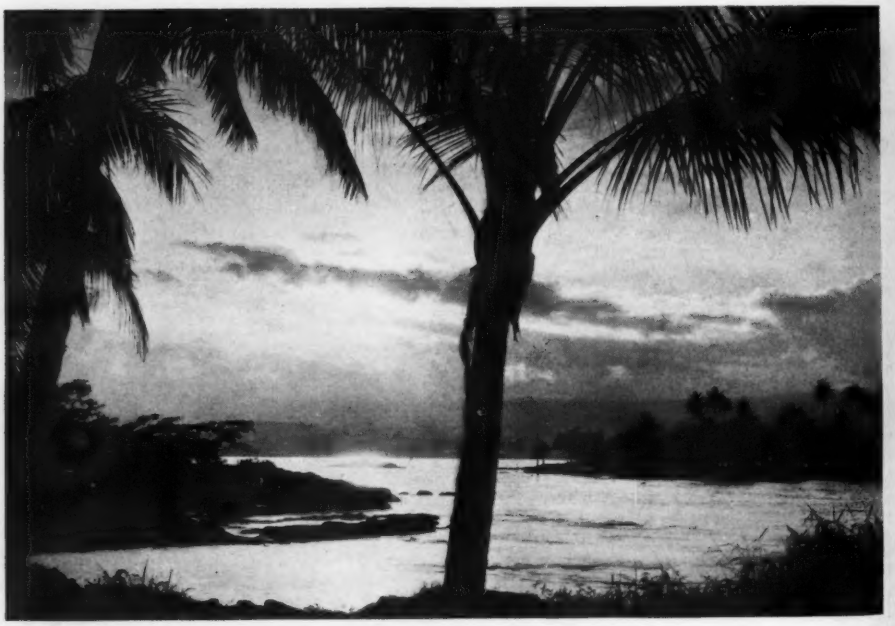


Steam Rising Where the Hot Lava Enters the Ocean, Hoopuloa Bay. Note the Head of the Lady, Madame Pele, in the Steam Clouds, Just Above Left Lower Corner.

CANOE AT SUNSET, OFF WAIKIKI BEACH

HAWAIIAN FISHERMAN WITH THROW NET, KAENAE POINT, OAHU

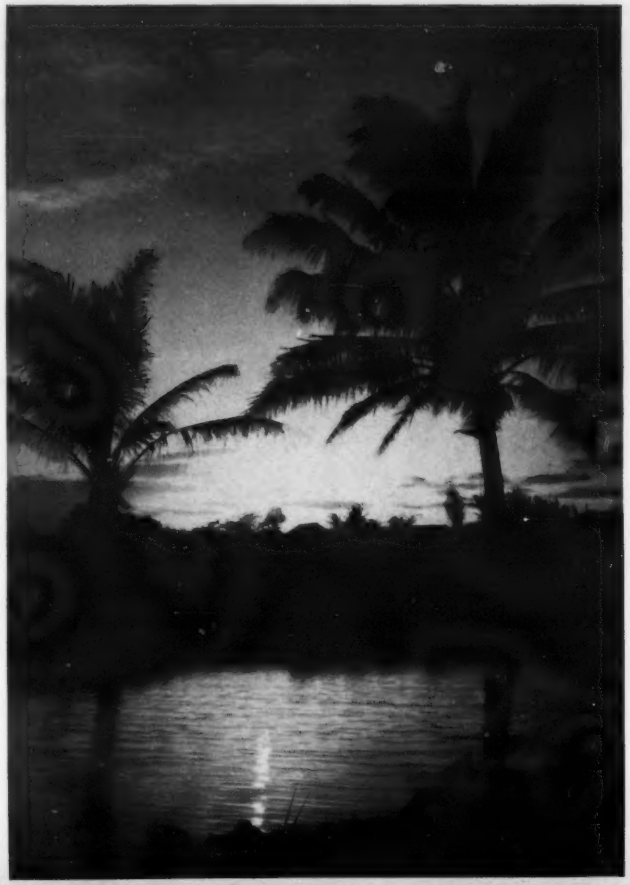
Sunrise, Hilo Bay, Hawaii



Sunset—Cocoanut Island, Hilo, Hawaii

The Rainbow Falls—Hilo, Hawaii

Boiling Pots—Hilo, Hawaii



PALMS IN THE MOONLIGHT, HAWAIIAN ISLANDS

SUNSET ON THE BEACH AT WAIKIKI

PALMS IN THE MOONLIGHT, HAWAIIAN ISLANDS

SUNSET ON THE BEACH AT WAIKIKI

TEA GARDENS—COCOANUT ISLAND

"This island was the legendary scene of one of the greatest exploits of the last of the heroic kings of Oahu. To obtain the daughter of the great Kamehameha, the chief of Oahu quietly stole ashore here, abducted the sleeping princess and carried her from the magic shore across the moonlit waves to his home, and as present day picnickers while away the time on the wave-lapped beach, beneath the clustering coconut trees, they still feel that Love treads the bleaching sands, a willing captive."—*The Real Hawaii* by Lieutenant Lucien Young.

PALMS, COCOANUT ISLAND

Sunset—Kealakekua Bay—Island of Hawaii

SUNSET IN THE HAWAIIAN ISLANDS

UNITED STATES
NAVAL INSTITUTE
PROCEEDINGS

Vol. No. 53, No. 8 AUGUST, 1927 *Whole No. 294*

Capital Ship Replacements

By BROCKHOLST LIVINGSTON

SINCE the Washington Conference on Limitation of Naval Armaments there has apparently been some question in various circles as to the right of nations to replace their capital ships with vessels the size and numbers of which differ from those included in the replacement tables of the treaty.

As an example of this we have the following quotation from *The Eclipse of American Sea Power,* Captain Knox's able résumé of the conference:

> The future battleship is now limited in size to 35,000 tons maximum displacement. It is optional whether they shall be made smaller by any nation. For example when it comes to replacing our battleships we could plan for a navy of fourteen battleships of 35,000 tons each, to make up our total allowance of 500,000 replacement tons in this class, or we could build twenty battleships of 25,000 tons, or any number of ships within the maximum limits of individual size and aggregate tonnage. Manifestly there is opportunity here for competition in design between the nations which may alter the theoretical ratio in battleship strength materially. (Page 118).

Hector Bywater and Maurice Prendergast in describing a visionary 17,500-ton *croiseur de combat* in their article "Post-Treaty Naval Design" (PROCEEDINGS, November, 1925) made the following remarks concerning replacements of less than the maximum individual tonnage:

> If the French ever build vessels of the described type, other powers may retaliate in kind by building super-*Indomptables.* In lieu of constructing two capital ships of 35,000 tons, they might build three of 23,333 tons apiece. . . . . Italy might do this, inasmuch as she, like France, has reserved the right to use her allotment of capital ship tonnage in any manner she pleases. Whether the other powers might do so is a debatable point; they appear to have tied themselves down to a set time-table of replacements by 35,000-ton ships only. (Page 2134).

They conclude:

> If France orders two 17,500-ton battle cruisers, ... Italy may retaliate in kind. Britain could not ignore the presence in the Mediterranean of four very fast and powerful battle cruisers of a new type. She might claim the right to commence in 1931-32 seven ships of 20,000 tons in place of four 35,000-ton capital ships licensed by the treaty. Ensuing political permutations, combinations and conferences we will not attempt to envisage. (Page 2137).

Undoubtedly the treaty is a trifle hazy in this respect but, as we must occasionally, we here accept what is implied by the written statements which although not covering our specific case yet deal with similar ones.

On this subject we find the following foot note to the replacement tables for France and Italy:

> France (and Italy) expressly reserves the right of employing the capital ship tonnage allotment as she may consider advisable, subject solely to the limitations that the displacement of individual ships should not surpass 35,000 tons, and that the total capital ship tonnage should keep within the limits imposed by the present treaty.

We also find the following note to the replacement tables for the United States, British Empire and Japan:

> Note.—A, B, C, D, etc., represent individual capital ships of 35,000 tons standard displacement laid down and completed in the years specified.

If then, the United States and Great Britain are allowed by the treaty to lay down

in the years 1931 and 1932, replacements "C", "D", "E", and "F" which the footnote directs "represent individual capital ships of 35,000 tons," we can not rightfully lay down in their place, seven ships of 20,000 tons each. Since France and Italy *expressly* reserve the right to use their allotments as they consider advisable, it is implied that there is a restriction upon how the allotments of the other three signatory powers can be used.

The conclusion of the Navy Department, expressed in *Information Concerning the U. S. Navy and Other Navies, May, 1925,* is:

> The number of new ships allowed each year in the above schedules for the United States, the British Empire, and Japan, must not be exceeded, irrespective of tonnage considerations. If, for example, a schedule for one of these powers permits two ships to be laid down during a certain year, these ships may have any displacement up to 35,000 each, or a total of 70,000 tons; but the schedule would not permit more than two ships to be laid down in that year, even though their total tonnage was kept within 70,000. The treaty does not place this limitation upon France and Italy. The schedule for these two powers gives the total replacement tonnage allowed for certain years, and this tonnage may be allotted as France and Italy consider advisable, subject solely to the limitations that the displacement of individual ships shall not exceed 35,000 tons, and that the total capital ship tonnage must be kept within the limits set by the treaty. (Page 63).

The matter of limitations to replacements is sufficiently clear to anyone examining the treaty closely but it is to direct attention to the finer details of the treaty that this paper is submitted.

The present writer also wishes to point out that Captain Knox's book was apparently written before the final draft of the treaty was made public, as will be seen from his mention of 500,000 tons as the capital ship allotment of the United States and Great Britain. This, as is known, was the first proposal, later changed to 525,000 tons upon the request of Japan to be allowed to retain the *Mutsu* which thereby increased her allowance from 300,000 tons to the final figure of 315,000 tons.

Messrs. Bywater and Prendergast appear to believe that the question is debatable. From the facts we have stated, there seems little room for debate. If France should build an *Indomptable* and thereby cause Britain some little annoyance in the Mediterranean, it would not be for Britain to "claim the right to commence in 1931-32 seven ships of 20,000 tons" but she might act in accordance with Article XXI of the treaty which states:

> If during the term of the present treaty the requirements of the national security of any contracting power in respect of naval defense are, in the opinion of that power, materially affected by any change of circumstances, the contracting powers will, at the request of such power, meet in conference with a view to the reconsideration of the provisions of the treaty and its amendment by mutual agreement.
>
> In view of possible technical and scientific developments, the United States, after consultation with the other contracting powers, shall arrange for a conference of all the contracting powers which shall convene as soon as possible after the expiration of eight years from the coming into force of the present treaty to consider what changes, if any, in the treaty may be necessary to meet such developments.

Article XXII considers suspension of a Contracting Power's obligations in case of a war which affects the naval defense of the power's national security.

The purpose of the Washington conference was to lessen the competition in naval armaments in progress at the time the conference was called. It was successful so far as capital ships and aircraft carriers were concerned. The conference did not desire to deny a just defense to any nation represented. Certainly then, if a new, unthought of power arises to endanger that defense, provision will be made to counteract the new force. But until that danger is apparent, it is expected that the nations signatory to the treaty will observe its provisions, among which is the implied, if not stated, one that replacement capital ships shall be, in the case of the United States, Great Britain and Japan, of 35,000 or less tons each and in such numbers as are stated in the replacement tables for each nation. This provision is modified in the case of France and Italy.

A Suggested Base *for the* Scouting Fleet

By LIEUTENANT COMMANDER HAROLD O'D. HUNTER, *U. S. Navy*

THE Scouting Fleet has been basing about six months or more of the year for the past two years in the West Indies, either at Guantanamo, Gonaives, or the Gulf of Guacanayabo. Prior to the World War the Atlantic Fleet based in Hampton Roads and Narragansett Bay and spent two to two and one-half months in southern waters.

Beginning with the World War both firing ranges and the number of practices fired yearly have been materially increased. The Atlantic Fleet schedule then apparently became unsatisfactory due to poor operating conditions such as continued stretches of low visibility and rough weather. Consequently areas with more favorable operating conditions were picked. It is believed that although these southern bases offer suitable weather conditions, the morale would be increased if sufficient recreational facilities, diversions, and more normal living conditions were available. Lately the writer has been thrown in contact with a number of officers and men of the Scouting Fleet who stated that they thought that a better operating schedule and more attractive bases would increase the morale. In addition, a great deal of praise is heard of the system which has been in vogue on the West Coast since a large fleet was sent there.

It is thought that the reason for the high state of morale of the Battle Fleet is that the ships are in areas with sufficient recreational facilities and diversions for officers and men. Moreover, married officers and men can be reasonably sure that if their families are at either San Pedro or San Diego, they will see something of them, as the destroyers are based at least six months of the year on San Diego, while the battleships are based on San Pedro for the same period.

Now the problem is to provide operating bases for the Scouting Fleet as suitable as those of the Battle Fleet. It cannot be done on the east coast of the United States. The harbors with sufficient room and depth of water are in vicinities that have too much fog, low visibility, and high winds. Consequently, as already has been done, the Scouting Fleet must spend a great deal of its time in southern waters. Instead of spending so much time in isolated localities like Guantanamo, Gonaives and Guacanayabo, why not base on Colon? Below is a comparison of weather conditions in the vicinity of Guantanamo and Colon, kindly furnished the writer by the aërological section of the Bureau of Aëronautics. These figures have been checked with data furnished by the United States Weather Bureau.

Mean Temperature	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann.
Panama Waters	80	80	80	81	81	80	80	80	80	79	79	80	80
Water, South Cuba....	75	74	76	77	79	80	81	81	80	79	77	76	78
No. Days with Rain													
NAS Coco Solo.....	15	15	12	17	21	25	27	23	25	25	27	21	253
Cristobal, C. Z.	15	14	14	16	21	23	25	25	23	25	25	21	247
Guantan. (L. Canos) ..	2	4	4	5	5	5	5	6	13	7	6	3	65
Cienfuegos	4	4	5	6	10	14	15	15	15	12	6	2	108
Port Au Prince	5	6	10	14	18	9	9	13	16	14	9	6	129
Santo Domingo	12	7	9	10	13	16	17	16	16	15	15	13	159
Amount of Rain (Inches)													
NAS Coco Solo.....	1	2	5	6	11	22	20	13	11	19	29	9	144
Cristobal, C. Z.	4	2	2	4	12	13	16	15	13	15	21	11	128

Amount of Rain (Inches)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann.
Guantan. (L. Canos) ..	3	3	1	2	3	2	1	2	8	7	4	3	38
Cienfuegos	8	8	1	1	4	6	5	5	6	6	3	8	40
Port Au Prince	1	2	4	7	10	3	2	6	8	7	3	2	54
Santo Domingo	2	1	2	4	5	6	8	7	7	9	5	3	59

Wind

Panama Waters—Avg. Force during year, 3 to 4 Beauf. with 8 to 11 per cent calms.

So. Cuban Waters—Avg. Force during year, 3 to 4 Beauf. with 9 to 10 per cent calms.

Gales (winds over 40 m.p.h.) are rare in both regions.

The above values are given in general to the nearest whole number. For this reason the totals as given may vary one or two units from the totals found by adding the above whole numbers. Records for Guantanamo and Naval Air Station Coco Solo cover two to three year periods. Since these periods are rather short, records from other stations situated along contiguous waters are included for comparison. These stations give records of from ten to fifty year periods. Since the shorter records at Guantanamo and Coco Solo agree fairly well with the longer records, they may be taken as essentially correct. Data was compiled from aërological logs submitted by naval ships and stations and from reports gathered by government weather services and the Isthmian Canal Commission. The records show that canal waters have considerable more cloudiness and rainfall than Cuban waters. Apparently wind conditions in the two regions average about the same for the year.

It can be seen that Colon has the disadvantage of more rainfall than the Cuban area, but would, it is thought, be a better base for the reasons enumerated below.

Before giving these reasons a plan of operation is suggested. Scouting Fleet base at Colon and operate from there for at least six months. This time should be selected so that there will be little interference caused by rain. June to November is the season of the most rain.

1. Anchorage Chart of Guantanamo gives twelve battleship and fifty-one destroyer berths. Some of the destroyer berths are in the vicinity of Caimanera. Anchorage Chart of Colon gives forty-three battleship berths and 113 destroyer berths, all of which are well protected behind the breakwater. Hence the space available at Colon is considerably greater than at Guantanamo.

2. The Scouting Fleet when in the canal area is nearer the Battle Fleet, thus facilitating combined operations either during peace or war.

3. At Colon the Scouting Fleet will be operating from a fortified base which, although possibly of no value in peace time, certainly can do no harm. As there are large Army posts in the Canal Zone both officers and men of the Navy should become better acquainted with the Army to their mutual benefit. An interchange of observers at each service's target practices should be interesting as well as instructive.

4. Colon has the advantage of a drydock and repair shops where emergency work, at least, could be undertaken. This should be of benefit not only to the Scouting Fleet but to the base. More demands of this base might bring about increased facilities which would be of use during war.

5. The Army and Civil Service doctors have supervision over health conditions of the Isthmus which assures healthier bases than those now provided.

6. Any athletic facilities available at Guantanamo are available or can be made so in the Canal Zone. In addition, officers have a golf course.

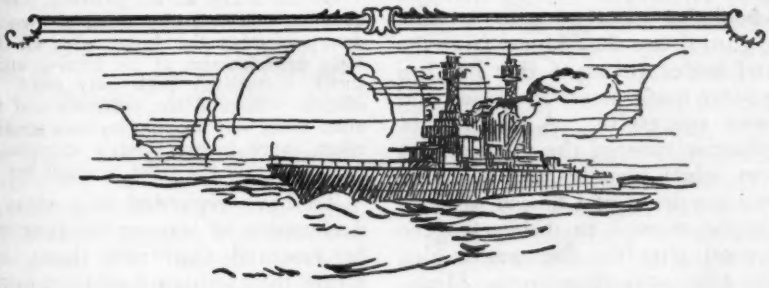
7. Instead of officers and men being isolated from everyone except the Navy, as is the present case, they would have the opportunity to see something of the Army and civilian population of the Canal Zone. Married officers and men could have their families live in the Canal Zone either during the time the Scouting Fleet is there or for the whole year. Two large hotels, apartments, and smaller hotels are situated in the Canal Zone.

Thus Colon might be made very analogous to the base of the British Mediterranean fleet at Malta. The Mediterranean fleet is based there most of the time. In the winter the home fleet from England is

met at Gibraltar or the Balearic Islands for a month or two of maneuvers. In the summer a month or more is spent visiting various Mediterranean ports. The rest of the year the ships are based on Malta, where a great many of the married officers and men have their families. There is a sufficient population of British Army, Navy, civilians, and Maltese so that the bachelors are not isolated on board ship with no outside contacts. Thus, they can lead a much more normal life than with our present system of isolation. Why not make Colon our Malta?

8. Under our present system, high ranking officers in the Scouting Fleet have about a two years' cruise at sea, while junior lieutenants and ensigns may have three or four. Many enlisted men stay in the same fleet or ship their whole cruise of four years and are at sea for a couple of cruises so that with the present system nearly half of their time may easily be spent in isolated unattractive bases.

It is believed that the above advantages of Colon make it worth while to try it out as a southern base in the place of those used at present.



When *the* Navy Railroaded *in* China

By Rear Admiral George R. Clark, *U. S. Navy (Retired)*

(Editor's Note: The following article was written when the author was a Commander and appeared in the Proceedings in March, 1909, under the title, "On Other Duty.")

On the morning of June 17, 1900, six gunboats, one English, one French, one German, and three Russian, engaged the Taku forts at a distance of about one mile in the second reach of the Peiho river; that is, around the first bend, a narrow neck of land intervening between them and the forts. This position was held from one o'clock, when the battle began, until daylight. Then about seven hundred sailors landed and made an unsuccessful attack upon the works. Things were beginning to look gloomy, ammunition was running short, and the guns of the fort were still firing as actively as at the beginning, when Captain Stewart, of the English gunboat *Algerine*, proposed to the commanding officers to go around the bend and engage at close range—from one to two hundred yards. This bold plan was at once carried out; the machine guns drove the Chinese from the batteries, and under cover of this hot fire the landing party made a second assault and this time was successful. A lucky shot from the *Algerine* entered the magazine at the south fort, which blew up with a terrific report, killing hundreds of Chinese soldiers. This catastrophe seemed to dishearten the enemy, for soon after the flag was hauled down and the place was abandoned. Meanwhile, the Japanese, who had gained possession of one of the forts on the south side of the river, turned the big guns upon the north fort, still held by the Chinese, and drove them out. By six-thirty the flags of England, Russia, Japan and Germany were flying over the works, and the enemy's troops were in full retreat to the southward. The Taku works were captured, and that day the Imperial troops threw off the mask, took the side of the Boxers, and attacked Tientsin.

The Japanese gunboat *Atago* and the U.S.S. *Monocacy* took no part in the bombardment, the former on account of being laden with ammunition and provisions for the allies, and the latter being held by instructions from the commander-in-chief, which, taking the ground that we were not authorized to initiate any act of war with a country with which we were at peace, confined our work to the protection of American interests. Accordingly, on the evening of the sixteenth, the residents and refugees of Taku and Tongku were directed to embark for safety at once on board the *Monocacy*, then lying in what was thought to be a sheltered berth at Tongku. Nothing loath, seven men, thirteen women, and sixteen children abandoned their homes and hurried on board.

W. Savage Landor, writing of the incidents of that time, speaks as follows:

> On the bridge of the *Monocacy* stood her commanding officer, encouraging the women and children swarming the decks, who, all the same, felt some apprehension at the hissing and bursting of shells, fortunately high over head. He and his officers reassured the refugees and tried to convince them that the ship lay in a position of safety, when, much to everybody's surprise, she was hit by a shell that cut right through her bows.

To have regarded that stray shot as a declaration of war on the part of China, to be resented then and there, would have meant the casting off of lines and going into the fight with several dozen women and children on board, a somewhat unusual proceeding, a fact that even the most strenuous advocates of glory at any price would have to admit. It was equally out of the question to land the refugees and turn them over to the tender mercies of the roving bands of robbers who had already begun their work of looting, robbing and killing. War, in one respect, is like a certain well known institution, which, we are told, should not be "entered into lightly or unadvisedly," and, at any rate, should not depend for its cause upon the exact location, whether a few yards to the right or to the left of the fall

of a stray shot. There is no time to back and fill about boarding a train after the train starts. The question of going or staying should be settled long before the engine pulls into the station. Then, too, innocent onlookers at a street fight have themselves to blame if struck by missiles going wide of their mark. Their plain course, in that event, especially if they have children in their arms whom they are unwilling to throw away, is to get behind a bigger tree. The truth is, we had been given a rôle and had to stick to it. The commanding officer in his official report said: "I feel a natural regret, shared no doubt by the officers, that duty and orders prevented the old *Monocacy* from giving her ancient smooth-bores a last chance."

In this connection it may not be amiss again to quote from Landor.

> It is pleasant to notice that, whatever the orders from the government in the matter of co-operating in the engagement at Taku, the feelings of the United States officers themselves on the gunboat did not differ from those of all the other officers of the allies.

After the fall of the Taku forts, at a meeting of the admirals on board the *Rossia*, a protocol was signed that placed the commanding officer of the *Monocacy* in control, in the town of Tongku, of all the buildings, the railway station, the water supply, rolling stock, etc. In this he was to have the assistance of an officer from every nation for the purpose of transmitting orders to whatever detachment might be using the station.

Then our work, the work that compensated in a measure for our enforced inactivity in the early part of the trouble, began. Taku had fallen but Seymour's column was yet to be relieved, and Tientsin, defended by only seven hundred troops (including thirty from our gunboat), was hard pressed by several thousand Boxers. The problem (Chinese puzzle) was to send the fast-arriving allies to the front over the torn-up, single track railway between Tongku and Tientsin. The commanding officer turned the duty over to me with the remark that "the road must be put in commission at once," a task simple enough, no doubt, for a railroad expert, but somewhat of an order for a seagoing man with seamen for his operating force! However, the time was short, and after a hurried inspection of the rusty locomotives and weatherbeaten cars left in the yard, I called the short-handed crew about me and told them the story. In less than two days five locomotives were in commission ready for use, four manned by our people and one by the English. Trains began running with American conductors and brakemen, and the work was on.

That it was essentially an American service, the following extract from an official report will show:

> The employees in this make-shift train service are all my own, with, at first, some English and German firemen and stokers. . . . . I tried to induce a civilian employee of the railway to go out with the train which has just left. My men were on the engine. I tried my best, but he had recently escaped from Tientsin, and said positively he "would not risk his skin again anywhere near those Chinese devils."

Following the good old service custom, before making any through runs with the locomotives we sent them on short shaking-down cruises, or trial trips, which were pronounced highly successful if the train kept the track and crept back into port without serious accident. The result was particularly pleasing, I remember, when the engines got back under their own steam, without the aid of the relief engine that was kept ready, night and day, to tow in any cripple suffering with leaky tubes, water famine, or hot boxes. The orders were to play for safety. We didn't break any records, nor, on the other hand, did we break any legs. A burst of speed would have meant a burst of boiler. I tried to impress upon the train crews that the race is not to the swift but to the careful. If any of our trains had been named Cannon-ball Express it would have been on account not of the speed but of the nature of the cargo.

Between trips search was made in the yard for anything that might be useful in our work. At first nothing came of it. Looted cars, scattered bales of goods, and scrap heaps could not be utilized. Finally, however, a private car, travel-stained and forlorn looking, was found, hauled to the front, and filled with coolies armed with brooms and scrubbing brushes. That discovery solved the problem, which up to that time had bothered us, of providing suitable transportation for officers of high rank. Anticipating the time when the telegraph lines would be desirable, we loaded (while we were resting) several cars with telegraph poles found in the yard and along the road, so that when the Japanese volunteered to rebuild the telegraph line every-

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thing was ready. I remember that there were three, just three, poles left after the cars had been unloaded along the track between Tongku and Tientsin. Nor shall I forget the astonishment of the captain at my reply to his question, asked in the presence of the Japanese, as to how many days it would take to find poles and have them ready to distribute along the track. "They are ready now, sir; the relief engine can start up the road with them in ten minutes."

The rolling stock of that road not being designed for the transportation of military supplies, it was found necessary in many cases to change the style of architecture of the cars. Then was shown the advantage that sometimes comes from combining several departments under one head. Being chief of construction, of equipment, of supplies, and of the ship's carpenter gang, I found no red tape in the way of an easy solution of the problem. The carpenter's gang did it with axes and saws. When the openings were not wide enough for horses and carts, we made them wide enough. This was hard on the property, of course, and would have brought tears to the eyes of the railway men, but they were not there to protest, and something had to be done. It was a situation that demanded acts before words.

One of the plans that worked well was the sending of trains in two sections, the first with troops, the second, about fifteen minutes later, with horses, wagons, tents, stoves and ammunition, with orders to take the side track near the terminus until the return of the emptied first section, and then proceed to the end of the line, where the waiting troops assisted in unloading. A few general rules like the one just mentioned worked automatically in a few days, and gave us time for other things.

The value of the service rendered by the *Monocacy* in supplying fresh water to the troops cannot be overestimated. The captain in one of his official reports said:

> I have also sent out two platform cars containing large fresh-water tanks, each with a capacity of about 5,000 gallons. . . . . I have been specially careful that every train and every car carried drinking water in small utensils, breakers, buckets, cracker tins, *as there is no potable water between here and Tientsin.* (The italics are mine, and tell of the greatest danger and difficulty with which we had to deal).

The asthmatic sentences of the log-book covering that period, together with the story between the lines always, in such books, plainly visible to the seagoing man, tell of busy watches, of obstacles overcome, of assistance given, of hard work done:

> Midnight to 4 A.M.—Heavy-gun firing started at E'd at 12.45. At 1:30 the *Iltis* left harbor. At 2:35 a projectile struck second cutter, passed through stern and sides of same, then over the starboard bulwarks and through port bulwarks at break of forecastle, five feet from deck, and did not explode. Small-arm firing occurring at intervals and singly from shore in vicinity of this vessel. Several shells passing over and bursting in vicinity.
>
> 8:00 A.M. to meridian.— Engaged cleaning locomotives and making up train. Refugees left ship, but finding conditions at Taku unsettled, returned. Surgeon gave assistance to three wounded (one Chinaman, two Russians). Distilling. Vice-Admiral Alexief visited the ship. Despatched train of twenty-eight cars with troops, horses, ammunition, and 10,000 gallons fresh water. Sent armed party up river and took possession of a large seagoing tug. At 9:35 Lieutenant I., of this ship, left for Tientsin, with twenty-two men, gatling gun, carriage and tripod mounts.
>
> Meridian to 4:00 P.M.—A train arrived at 3:00 and reported two locomotives disabled. Brought in same and made preparations for sending up another train. Filled water tank and sent to front together with a repair car. Sent to train for use of English naval force one three-inch B. L. R. and ammunition.
>
> Midnight to 4:00 A.M.—Sent assistance to Japanese torpedo boat aground in the river. At 3:15 despatched train with Russian troops. Relief engine brought back disabled train. Distilling. Heavy firing in direction of Tientsin. Made special preparations to resist threatened attack of Boxers.

The log-book, too, served to tell when Sunday came. There was no church bell to ring out glad tidings of "peace on earth, good will toward men"; but this was just as well perhaps, for the call of the bell would have been but faint in all that din telling a story so different.

Although things ran along smoothly, we were not wholly free from worries. The cares that infested the day, instead of folding their tents and stealing away, often remained over and stood the night-watches with us, when they took good care that we did not sleep on post. Indeed, our wrestling matches with the little god of sleep in that busy time were of the catch-as-catch-can variety. Trains were sent up the road at night as often as during the day. The situation was much like the one that called forth the old-time order of the boatswain to the busy crew, "Turn to while you are resting and break out the fore hold!"

However, we luffed through the blue days with thoughts of the compensation—the

many letters of thanks and appreciation, official and private, received by our commanding officer from the commanding officers of the various bodies of troops we helped to the front; the remark of the English captain, made in the presence of a group of foreign officers, that Tientsin would not have been relieved, had it not been for the American gunboat; the satisfaction that comes with taking part in work that counts, work that grows in ease and interest; the remembrance that, although Napoleon's despatches always contained the word glory, Wellington's favorite word was duty—and all these helped. Perhaps our satisfaction would have been even greater had we known then that our commanding officer was to be decorated by the Emperor of far-away Germany with the Third Order of the Red Eagle. To get the correct view of a picture, it is sometimes necessary to look at it from a distance.

The work, while trying and difficult, was not without its amusing incidents. I had an interpreter (a seaman from the *Monocacy*) close alongside all the time, who spoke all the known languages. He needed them. I sometimes thought he would lose his mind—or his tongue, but he lived through the trouble, and at last accounts was sorting out his languages in an attempt to get them straight again. His name should go on record, for it fitted him. It was Gold.

"Sir," said a foreign officer, "I should like to have a train Wednesday morning at six o'clock for seven hundred troops and one hundred horses."

"Very well, sir," was the reply, "the train will be ready." And then, in an undertone to my messenger, "Ask the engineer of No. 3 if he thinks he can make one more trip without blowing up the boiler."

"Is this the ten o'clock train?" I was asked one busy morning.

"No, this is the Tuesday train." Ten o'clock train, indeed!

The noise of the moving cars was not so loud as to prevent the general manager from hearing some of the remarks of his subordinates. "Bill," said an engineer to the ordinary seaman then acting as stoker, "do you think we can make the run to Tientsin without a compass?" "Oh, ask the coxswain about that," said Bill, as he threw another shovelful of coal into the furnace. Fortunately these pleasantries were all in English and passed unnoticed by the busy strangers.

But underneath it all, those of us who knew those faithful men could detect the earnestness, the close attention to detail, the determination to succeed, that mark the bluejackets' conduct in time of trouble, and win their officers' confidence and regard. Cheerful, obedient and efficient, working night and day, they were a source of pride to their people and of wonder to all foreigners.

The operating of the Chinese railway under the conditions existing that memorable summer is more simple in the telling than it was in the doing. It involved more than appears on the surface. To keep the wheels turning, many things had to be thought of. The number and condition of the cars available for use; the number of troops, horses, carts, boxes of ammunition each would hold; the locomotives and the number of loaded cars each could pull; the position and length of sidings; the water supply for the engines; the best means of loading and unloading horses and carts; the way to avoid giving offense and to preserve strict impartiality when two bodies of troops of different nations wanted a train at the same time —all these questions and many others clamored continually for prompt answers.

Under these conditions it was not conducive to clear thinking or quick decision to hear, as we often did, that the Chinese were assembling in the vicinity with the object of making an attack upon the yard. The train crews were always armed. The best excuse given for a late train was that of the boatswain's-mate conductor who said that he had stopped to get a few good shots at a body of Boxers intent upon placing obstructions on the track.

Our hammer-and-tongs measures afterwards met the approval of the real general manager of the road, who, on his return from exile, laughed heartily when told of the unique methods of nautical railroading, and remarked that "the system, though unusual, has evidently been successful."

No, it was just plain, very plain, everyday railroading, without fancy frills or flourishes, but it did the work given it to do. When, after several weeks, the breathing spell came, and we found time to get an all night in, it was pleasing to know that not a man had been delayed a minute, not a limb had been broken, not a car had run off

the track, not a life of man or beast had been lost. Thirteen thousands troops, several hundred horses, camp equipage, ammunition, provisions, water—everything for the maintenance of the armies—had been sent up over a rickety, single-track railway, which, weeks before, had been abandoned by its people to the kind attention of Boxers and roving bands of robbers—this by a group of bluejackets from our smallest gunboat.

Things, live interesting things, happened with sufficient frequency to drive away all traces of *ennui*. Soon after the capture of the forts the foraging party of one of the allies collided with the party of another ally and robbed them of their provisions. Whereupon the commanding officer of the defeated people buckled on his sword, went over to the neighboring fort, and asked questions. The accused, not to be outdone in promptness and politeness, then and there stood the identified offenders up against the mud wall of the fort and had them shot. That closed the incident. On another occasion a zealous officer asked for a coolie then acting as aid to one of our locomotive firemen, with the declared purpose of depriving him of his head. When refused on the ground that, for the time being, the coolie was an American, the officer went away shrugging his shoulders and wondering, no doubt, at the foolishness of those who do not in war time act upon the good old rule, "whenever you see a head, hit it." At another time a squad of six or seven held a merry little target practice of their own, the target being the head of a Chinaman swimming across the river. The exercise, from its deliberateness and the range-finding shots, seemed to be record rather than battle practice. When ordered away the marksmen seemed unable to understand that the unarmed Chinaman was a non-combatant, and, as such, not eligible for use as a target. It was another case of hitting the head. A favorite custom of one of the allies was to scour the country for coolies for camp work, and to bring them in in squads, or bunches, of four or five with their queues tied together. This plan was somewhat awkward for the coolies but economical for the troops. One corporal could do the work of several men. The motto seemed to be, "United they come, divided they run." Kid gloves were not in fashion in Tongku. Owing to the scarcity of furniture in the home-made hospital at Tongku, where I served a short term, the only table did duty in both the dining-room and that other room for which hospitals are built. Often our meals were hurried in order that the table might be put to its legitimate use, which, of course, always had the right of way. There was no time for walnuts and wine. Turning from the table to the window, one looked in vain for the pleasant surroundings so helpful to hospital patients. There an ugly picture met the eye—a dreary, dust-covered, sun-scorched plain, and a sluggish river on which things unspeakable, seen only in war time, steadily growing in number and unpleasantness, turning lazily in the eddies, shining brightly in the sun, floated slowly, always slowly, until caught and held by projecting banks, where they became the prize of snarling, unclean, half-famished creatures. Truly, no day passed without incidents that brought to mind Sherman's terse definition of war.

The fatigue of the day was often driven away by the fine singing of the soldiers encamped for the night near the station. In the evening a single tenor voice, taking up the words of a song, usually those of a national hymn, would be joined by others at the more distant posts, until one grand volume of sweet sound was carried in the still night air far out on the plains, taking to the ears of the wondering Boxers news of the coming of the modern crusaders. Nor was this open-air concert without a proper stage setting. The curtain rang down each night to the accompaniment of sweet music, soft twilight, and the soothing calm that comes with nightfall on the plains. But oh, what a difference in the morning! The rise of the curtain next day revealed the presence of the men with spears, the shield-bearers, the noise-makers, the soft music displaced by discordant sounds, while the crack of the rifle, the sound of the axe, the cry of the Chinaman, gave evidence that the work of benevolent assimilation, the march of civilization, had been resumed.

There was plenty of time to note the differences in equipment, discipline, and organization of the several companies that passed up the line—Sikhs from India, French from Annam, the First Regiment of Chinese from Wei-hai-Wei (fighting for the English under English officers), Germans and Italians, Japanese and Americans, Russians and Austrians—all against China,

the West against the East, the newer civilization against the old. The bearing of the Russians was suggestive of strength and courage, and the Japanese, while not lacking in these qualities, were remarkable for their careful attention to detail, splendid discipline, and matchless organization. They were quiet, polite, and observant. The Sikhs, once seen around their campfires, can never be forgotten. Tall, dark and mysterious, they have the faces of poets and the manners of masters of the occult sciences.

Although our bluejackets are not in need of testimony as to their fitness, some of the preceding paragraphs may serve to show what can be done by the crew of a small gunboat when suddenly confronted with problems not in the book. I dare say that all work that has to do with armed conflicts should be either war or magnificent. This task surely was not war, nor could we console ourselves with the thought that it was magnificent. Its service was that of the only bridge across a swollen stream to an army on a hurried march. The timbers, straining in the dark far from the limelight, creaked and groaned, at times, under the weight of the martial hosts, but remained in place until the last man was over. Then, the work done, the bridge was dismantled, and the various parts were stowed away, but not too far away, I trust, to hear the next assembly call.

Some Strategical Aspects *of* Radio

By LIEUTENANT HARRY A. ROCHESTER, *U. S. Navy*

IN THE past few years there has been a steady increase in dependence, and in the actual number of messages sent by radio for naval purposes. Our angle of vision may be so small on being close to the water that we cannot see the sea, and, perhaps, we might enhance our perspective by inquiries which might prove of value in directing and shaping this growth. The volume of traffic at one of our largest shore radio stations increased 31.6 per cent in 1925 over 1923, and 1926 indicates a proportionate increase. It hardly seems likely that this increase in volume was due to the urgency of additional administrative and operative matters over previous years. Again, this growing number of messages was not caused by an undue increase in outgoing shore messages, as the ship to shore traffic during this time averaged fifteen per cent over shore to ship communication. Rather, a definite trend is indicated, wherein the naval service is gradually accepting and depending more on radio communication, just as the broadcasting of speech and music gradually has popularized radio ashore within recent years.

It may happen, though, that we fail to see through the maze of these peace-time messages, and so forget the designed ends for which naval radio is essentially operated. The statement of the Director of Naval Communications should be kept in mind: "The mission of the naval communication system is to furnish from the very moment that war is declared, quick, reliable and, when necessary, secret communication between units of the Navy, both afloat and ashore." We might prepare ourselves for some problems of the nature by reflecting on some communication difficulties of the past, and on certain strategical aspects of radio in the World War.

In 1805, Nelson, in his historic pursuit of the French Fleet from the Mediterranean to the West Indies, arrived in the Caribbean only to find that Villeneuve had evaded him, and was en route to Europe. Nelson himself turned about and began retracing his own wake to the eastward. The Admiralty at home had to be notified. A despatch frigate, its speed depending on the vagaries of the wind, was sent on ahead to carry the news some 3,500 miles across the Atlantic. Any consequent action necessitating a revision of plans, or a new disposition of forces, could not begin until the actual, physical arrival of the original intelligence despatches from Nelson.

Later, with the advent of the telegraph, military communications ashore were transmitted more rapidly, but the Navy was still laboring under its old disadvantage of no such means of quick exchange of information over the vast distances at sea. In 1886, Captain Mahan suggested as a possibility that, ships operating off, say New York, the Delaware and the Chesapeake, might be in communication with each other by submarine cable. However, the Spanish American War still saw the use of despatch vessels. Two small ships would scout in company, and, on sighting the enemy, one vessel would carry the news as a despatch boat to her own forces, while the other would maintain contact with the enemy. Here, in a span just short of a hundred years since Nelson's time, the dependence for communication of separated ships at sea was placed solely on despatch boats, and any advance in shortening the time of transmission of messages was due to the increased speed of steam despatch boats over sail.

It was only a few years later, in the Russo-Japanese War, that the advent of radio made the actual physical transmission of messages no longer necessary. Togo, operating off Port Arthur, had had a rather sad experience with enemy mines and torpedoes. So he moved his capital ships sixty miles away to the Elliot Islands and there, instead of the strain on personnel and material of being constantly at sea, he lay at anchor for needed repairs and overhauling. At the

same time he kept in radio touch with Kaimura off Vladivostok. Yet the Japanese observation ships off Port Arthur could inform Togo and Kaimura, almost simultaneously with its occurrence, of any movement of the Russian admiral to proceed to sea. Here, for the first time in naval warfare, we have such a disposition of forces made possible strategically by the introduction of rapid radio communication.

A casual deduction might be drawn from the foregoing historical review that radio greatly simplified the art of war in making possible almost instantaneous transmission of messages over great distances. On the contrary, the World War proved the opposite to be true. Radio, in particular, further complicated the exercise of strategy. More alertness and ingenuity were required of the various commanders and, in turn, the coördination of all units was often dependent on a comprehensive, well organized and disciplined communication organization.

At the beginning of the war, in 1914, the English had a very inclusive view of the use of radio, or wireless telegraphy as they call it, and they seem to have set out with a very definite plan of improvement as Admiral Jellicoe in *The Grand Fleet, 1914-1916,* says:

> But, after all, it was the conditions under which war broke out that made it necessary for us in the Grand Fleet to build up what was almost a new organization. . . . . Wireless telegraphy developed with great rapidity and was put to many uses not dreamt of in pre-war days.

On the other hand, the Germans lagged behind and received some of their experience through costly lessons. They regularly broadcasted propaganda from the powerful Nauen station for the consumption of anyone who might care to listen. Yet, in a number of other cases, they failed to realize that the enemy might also intercept secret traffic, intended only for German listeners. From the beginning, the British adhered to a doctrine of radio silence in the movement of a large body of ships, while the Germans do not seem to have been thoroughly disciplined in this respect until two years later in 1916.

The beginning of the World War saw the British with plans to destroy the enemy's means of communication between the outlying ships and colonies and Germany. The latter's largest naval force outside the North Sea was the East Asiatic or Pacific Squadron under Admiral von Spee. This squadron was in continual need of fuel and supplies, and kept in touch with the stations in the colonies and the ships of the train by means of radio. The British lost no time in operating against their net work of communications. Germany's largest radio station at Nauen, near Berlin, worked with Kamina, Togoland, on the Gulf of Guinea, and the latter in turn was in touch across the Atlantic with Pernambuco, Brazil, by means of three cables at Monrovia, Liberia. In the Pacific, there were German cable and radio stations at Yap, Nauru and Anguar in the Pelew Islands, at Apia, Samoa, and at Tsingtau, China. The first month of the war, August, saw successful land operations against Kamina in Africa, and successful naval operations against the Pelew and Samoan Island stations. Other high power stations, such as Windhuk, Dar-es-Salaam and Tsingtau, which were better protected, were proceeded against later.

Yap, with its high power radio station and cables westward to Tsingtau and southward to the Dutch Islands and the Bismarck Archipelago, was a particularly important center of German communication in the Pacific. When Admiral Jerram proceeded against Yap he observed radio silence in order to effect a surprise to keep his movements secret. Three days later the *Australia* called him but he did not reply, but continued on his mission without disclosing his position or intentions until the apparatus at Yap was destroyed.

It may have been a case of necessity on the Germans' part, but the Pacific Squadron did not follow Admiral Jerram's example in observing radio silence. At the declaration of war, the fact that the location of this German squadron was unknown was a matter of serious concern to the British colonies. Admiral von Spee's moving away from Australia was inferred as the *Scharnhorst's* signals gradually became weaker. Two months later we find Suva, Fiji, intercepting the message: "*Scharnhorst* on the way between the Marquesas and Easter Island." Again, Thursday Island intercepted a message in plain language to a German man-of-war warning her to keep a sharp lookout as British ships were in the vicinity. With the exception of being sighted off Apia in September, Admiral von Spee's movements from August to the Battle of Coronel on

November 1 were inferred mostly from intercepted radio communication.

After the destruction of this German squadron at the Battle of the Falklands, December 8, 1914, Germany's naval forces and communication system outside of Europe were negligible. At the beginning of the war in 1914 Germany had one hundred twelve deep sea cables. By the Peace Treaty of Versailles, she was deprived of almost all but the end sections of her former great cable lines. Should she again build up a colonial system with interests spread over the globe, radio presents itself as being of primary importance in communication between such points.

Let us now turn to the main naval theater of the World War in the North Sea where larger scale operations were carried on in a comparatively smaller area. Germany's strategy in these waters was necessarily on the defensive because of her inferior strength. She intended to bring about a condition approximating naval equality by attrition, raids and sorties against the British forces. The element of surprise is one of the outstanding features essential to the consummation of such a plan. Yet, there are examples of German ships disclosing the positions of ships at sea by the unwary use of radio.

On December 15, 1914, a German force of five battle cruisers and some light cruisers and destroyers set out to attack the coast towns of Scarborough and Hartlepool. The Germans realized that secrecy and surprise were very important phases to be observed in their raiding operations, and a strict radio silence was enjoined on this force. However the radio discipline does not seem to have been of the best, and several of the ships of the light forces compared their positions by radio, seeming to disregard the possible disclosure of their locations to the enemy.

The British, on learning of these ships being at sea, sent out one battle squadron, a battle cruiser squadron and some light forces. On the afternoon of December 16, the Admiralty forwarded to them the position of the German battle cruiser *Seydlitz*, which was returning after having participated in the bombardment. In the meanwhile the British force was seeking an engagement with the German raiding force, which it could engage with advantage because of superior strength. Imagine their surprise a few hours later when the admiral despatched the further information that the High Seas Fleet, much superior in turn to the British force, was also at sea to support the cruisers on their way home. Again, on the afternoon of December 17, the Admiralty learned that the High Seas Fleet had returned to the Jade, their outer roadstead.

The *Seydlitz* had sent its position in code to the Commander-in-Chief of the High Seas Fleet, but the English had intercepted it, and found it to be in a code in their possession. Even if the code used by the *Seydlitz* had been undecipherable, the British could have obtained the ship's position by fixes from their radio compass stations. Admiral Scheer, in *Germany's High Seas Fleet in the World War,* observes in connection with this premature information obtained by the British:

> The English received the news through their directional stations which they already had in use, but which were only introduced by us at a much later period. . . . . In possessing them the English had a very great advantage in the conduct of the war.

In getting ready for the major operations by the German Fleet in May, 1916, which resulted in the Battle of Jutland, ten *U*-boats, followed by more later, put to sea for scouting against enemy men-of-war. The *U*-boats intercepted numerous messages indicating that the English were carrying out vigorous anti-submarine measures. The English, in turn, correctly inferred from the enemy radio and other activity that a big German naval offensive was in the making, and they made preparations accordingly. On the morning of May 30, the English directional stations reported that the High Seas Fleet had left the harbor of Wilhelmshaven for the outer Jade Roads. In the late afternoon of the same day the English intercepted a coded despatch, namely, "31 May Gg 2490," addressed to all units of the High Seas Fleet. The English were unable to decode this message, but considering the scope and importance of the address, together with preceding events and earlier indications, they decided that the Germans were on the eve of their planned offensive. Forty minutes after this cryptic despatch was intercepted, the Admiralty ordered the Grand Fleet to sea.

The German station at Neumunster, in turn, listened in on the English, and re-

ported that a number of battleships with light forces had left Scapa Flow. This isolated information, however, offered no pertinent suggestion of the British plans and intentions. On the other hand, the information gleaned from the air proved more valuable to the British. We find the latter taking prompt counter measures, with the Grand Fleet actually putting to sea three hours before the High Seas Fleet left the Jade Roads for their intended surprise major operation.

At 11:10, May 31, the Admiralty informed Admiral Jellicoe that the High Seas Fleet had gone to sea early that morning, but the directional stations were still hearing the German Fleet in the Jade. This information may have had a misleading effect on the English, as they might have closed the separated cruising disposition of their forces had they known of the proximity of the enemy fleet. As a matter of fact the German Fleet had left nine hours before the time of the transmittal of the Admiralty message. The opposing forces made contact only three hours and ten minutes later, both sides being taken by surprise. The reason that the British directional stations were confused and misled was because the flagship *Friedrich der Grosse,* on going to sea, transferred her radio call sign to *Entrance III,* a station ship at Wilhelmshaven.

On the morning of April 23, 1918, the last German naval movement of some magnitude took place. The whole High Seas Fleet put to sea, and advanced toward the Norwegian coast to operate against the strongly escorted British convoys to and from the Scandinavian countries. The German fleet maintained absolute radio silence, and the British had no inkling of the enemy's being at sea until the radio was used in connection with the serious accident to the *Moltke.* Twenty-four hours after putting to sea, on the morning of April 24, the *Moltke's* inner starboard propeller was flung off the shaft, causing various engine room casualties, and eventually bringing the ship to a standstill. The *Moltke,* after being towed for a while and then torpedoed, finally reached port under her own steam. Though the use of radio was almost essential to the *Moltke's* safety, the radio warned the Admiralty that the High Seas Fleet was at sea, and endangered the German fleet in disclosing its activities to the superior Grand Fleet. The High Seas Fleet returned to port without having accomplished its mission, but its failure does not seem to have been due to an incorrect conception of the task.

In this case, the German plan seems to have been well planned and executed. The German fleet was actually on the convoy routes on the day previously decided upon, as the most likely on which British convoys would be encountered. It was a matter of chance that at that time an inbound convoy of thirty-four ships was fifty miles from the Forth and an outbound convoy of forty-seven ships was in the river. From an unimpassioned viewpoint concerned with only the military merits of the case, a very serious blow would have been struck had coincidence favored the Germans. We find the latter with the proper respect for absolute radio silence being thwarted from accomplishing their mission merely by chance, and not by the threat of a superior enemy fleet.

On the other hand, fate saved the British from a disastrous blow by the enemy against their shipping. The English submarine *E-5* observed the High Seas Fleet putting to sea, but no report reached the Admiralty prior to the radio activity occasioned by the accident to the *Moltke.* Apparently, the submarine observing forces in the Bight were not strong enough to ensure the transmission of more complete and full information of the departure of a number of German vessels than was intercepted by the wireless and directional stations at home. Previously, the directional stations had always warned the English that a major operation was on the eve of taking place, and preparations were made accordingly. Then the pendulum swung the other way. Probably on account of the delayed information, the British did not have enough time in which to carry out any effective counter moves before the High Seas Fleet returned to port. Too much reliance cannot be placed on directional stations alone, if one side refuses to accommodate the other by the careless, needless use of radio. The disadvantage of relying too much on information of wireless directional stations was very decidedly and practically demonstrated.

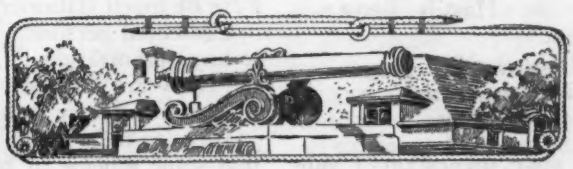
However, the fact must not be forgotten that naval operations in the North Sea were confined to a small area in comparison to the large spaces of the Atlantic and the great expanses of the Pacific. The English not only had a superior fleet, but also the British Islands offered the natural, geo-

graphical and strategical advantage of blocking Germany's path to the ocean. With the main theater of naval warfare concentrated in this locality, the close relationship of the forces at sea and the shore radio stations was possible. Yet there are many valuable lessons to be drawn from the use of radio in information and security that might be applied in the future to operations similar, or more extended than those of von Spee's squadron in the southern Pacific and Atlantic in the first year of the war.

The restrictions that were observed more and more in the strategical use of radio as the World War developed, increased instead of lessened the importance and problems of communications. First, the commander had to exercise mature judgment, before contact with the enemy, on the advisability of employing radio, and secondly, the radio organization had to be comprehensive and well drilled to carry out the commander's wishes to the letter. Many of these restrictions vanished as soon as the enemy was sighted, when smooth and rapid radio communication was instantly needed. We have seen the wariness of both sides prior to contact in the Battle of Jutland, but as soon as the *Galatea* engaged the *Elbing* the silence was sharply broken. Commander O. Groos, I.G.N., states that he examined about 10,000 German and English radio messages in his study of this engagement.

At the beginning of the war, the British lost no time in destroying Germany's network of cable and radio communications reaching down through Africa, around the globe to China. Admiral von Spee in the five weeks between his victory at the Coronel and his destruction at the Falklands must have realized that this gradual breaking down of his communications, so essential to his operations, eventually would end in his defeat. In the North Sea it took the Germans two years before they had a proper conception of the uses of radio. As in the case of the *Seydlitz* in the battle cruiser raid on the coast of England, the Germans many times betrayed their positions to the ever alert British radio compass stations. Again, it was the intercepted German despatch "31 May Gg 2490," addressed to all units of the High Seas Fleet, that actually put the British Fleet to sea before the Germans preceding the Battle of Jutland. Then, we have the Admiralty improperly influenced by the transfer of the German flagship's call to a station ship, with the consequent approach disposition of the Grand Fleet open to criticism. In the German Fleet advance against Norwegian shipping in April, 1918, we find the Germans with a correct conception of the use of radio. In this case the British seem to have placed too much reliance on the interception service of their directional stations without having sufficient submarine or other observation forces to confirm and support the radio means of information.

It must not be forgotten that while radio may have simplified greatly the rapid transmission of information since the days of despatch boats, it has also introduced the possible betrayal of one's own security by disclosing the same information to the enemy. Radio is like the two-edged rapier—if skilfully handled, swift and direct in a thrust against an opponent, but insensitive to any feeling of allegiance; if brandished clumsily, it is just as swift and direct in its rebound against its own wielder.



An Officer Detail System

By COMMANDER H. E. KAYS, *U. S. Navy*

U.S.S. ————
October—, 192—.

To Commander ————
Detail Section,
Bureau of Navigation.

MY DEAR BROWN:

I KNOW you are a busy man and I hesitate to bother you, but I will have been two and a half years on this ship in December and I would like to find out when and where I shall go ashore. Is a lieutenant commander's cruise now two and a half, or is it three years?

I would like to get a job on the west coast as my wife's parents live out here and I like service here. What job can I get?

Sorry to bother you. Sincerely, JONES
Lieutenant Commander

Bureau of Navigation,
October—, 192—.

To Lieutenant Commander ——— Jones,
U.S.S. ————

DEAR JONES:

Your cruise will probably expire in December, this year. The present policy is to send lieutenant commanders ashore after two and a half years, but that policy might be changed at any time.

I cannot promise you anything at the present time.

Suggest you apply officially for any job you may want.

Hastily, BROWN

November—, 192—.

To Commander ———— Brown.

DEAR BROWN:

Complying with your suggestion, I submitted my official application for duty at the ———— Navy Yard, yesterday. I hope you can fix me up.

Kindest regards, JONES
Lieutenant Commander

Bureau of Navigation,
November—, 192—.

To Lieutenant Commander ———— Jones,
U.S.S. ————

DEAR JONES:

Am sorry but there will be no job vacant for a lieutenant commander at the ——— Navy Yard in December.

What other job would you like? I don't know whether we can leave you on the west coast or not. Sincerely, BROWN

November—, 192—.

To Commander ———— Brown.

MY DEAR BROWN:

Am sorry you can't get me ordered to ————. It is very important that I know soon whether I will stay on this coast or not. I have had to buy a house out here as the rents are prohibitive, and I need time to make arrangements if I have to go to the east coast. Do what you can for me.

Sincerely, JONES

And so on, *ad infinitum.*

Along in December, having heard nothing in the meantime, Jones receives his orders to another, equally desirable, station on the west coast. The detail officer has done his best, and hopes no request for a revocation or change will result. At the same time he has been settling the future careers of numerous other officers with equally urgent cases. Jones, and also Mrs. Jones, are satisfied, after months of unrest, and the expenditure of much stationery.

Contented personnel is a wonderful asset to any organization. How many officers of the Navy are there who do not have a feeling of uncertainty at least once every three years as to their immediate future, and wish that some scheme of officer detail could be devised so that they could tell with reasonable certainty some months ahead of time, what their next duty will be?

The following plan is suggested, one that should at least save time for the conscien-

tious, hard working detail officers, and should also make the officer personnel more contented. It could do no harm, and might do some good.

The scheme here outlined refers more to the detail of line officers, commissioned and warrant. It could be used equally well for the staff corps, but, on account of the smaller number in these corps, the need is not so apparent. Their detail officers can keep in closer touch with duty requirements and personal desires.

Why not have a form letter, to be sent to each officer six months before his present tour of sea or shore service should terminate according to the current policy of the Bureau of Navigation? This letter would inform him of the probable date of his next change of duty, and would request as a reply a statement as to the officer's desires as to future duty. A longer period than six months might be advocated, but it seems that nine months or a year would be too long a time for the Bureau to be expected to predict dates of expirations of cruises. Less than six months would not give adequate time to reach officers on distant stations, allow them time to make up their minds, communicate their preferences, and receive their orders. Six months to settle their affairs, so important to an officer's morale and contentment, seems about right.

The following forms are suggested, the object being to furnish the Bureau brief and accurate data without resort to personal letters.

Form letter (1) would be mailed to every officer in duplicate, six months prior to the probable date of his detachment.

(1)

N Nav. (In Duplicate)

Navy Department,
Washington, D.C.
———— 192—.

From: Bureau of Navigation
To: ———— U.S.N.
Subject: Prospective change of duty.

1. Your present tour of ———— duty will expire about ———— 192—.

2. Please indicate below your preferences as to future duty, and return to the Bureau, retaining the duplicate.

————
Chief of Bureau

————
By direction

First Endorsement

———— 192—.

From: ———— U.S.N.
To: Bureau of Navigation

1. First choice for duty————
Second choice for duty ————
Official home address ————
Present address of family————

2. I will ———— desire ———— leave of absence on detachment.

3. Remarks: (Give reasons for desiring particular assignments.)

(s).————

N Nav.

Navy Department,
Washington, D.C.,
———— 192—.

From: Bureau of Navigation
To: ———— U.S.N.
Subject: Prospective change of duty.
Reference: Bureau's letter ———— of ———— 192—.

1. Receipt is acknowledged of your request for change of duty, endorsed on reference.

2. You will probably be granted ———— leave and ordered to ————.

————
Chief of Bureau.

————
By direction.

(Note: The above procedure will be carried out by the bureau as closely as is consistent with the public interests, and is not to be construed as a promise of future assignment.)

The Bureau of Navigation would then issue the orders to the officer one month prior to detachment. A procedure such as this would help the individual officer to answer the ever present question, "Where do I go from here," would save him personal worry and expense, obviate a haphazard official and personal correspondence, and increase his value to the Navy.

It would not be expected to function in times of national emergency, but will at other times in direct proportion to the care taken in its administration.

Distance Graph *for* Light *on* Horizon

A graphic means for determining the distance from a light as it is raised on the horizon

By G. T. RUDE, *U. S. Coast and Geodetic Survey*

THE quest of the navigator for every means of lessening the chances of disaster at sea has led him to devise various methods for obtaining the location of his vessel to meet the varied conditions imposed upon him by the vagaries of the weather. These methods differ in accuracy and his judgment dictates the degree of reliance to be placed upon each. Some furnish only rough approximations to his true position, yet are preferable to dead reckoning when making a coast after a period of stormy weather with no astronomic determinations of position.

The distance of visibility at sea of an object of known height as it is raised on the horizon, together with its bearing, furnishes a ready means for obtaining an approximation to the true position of a vessel. This method is of value when raising a light house at night in making a coast after stormy weather.

The *American Practical Navigator* contains a table, (Table 6) for determining the distance of an object at the time it is raised. For determining the total distance to the object the distance given by the table corresponding to the object's height is added to that corresponding to the height of the observer's eye. This table, however, is not always at hand when needed for this purpose. The graph, in the form of a folder accompanying this article, can be detached, mounted and hung in a convenient place on the bridge. It has been devised for furnishing distances directly and expeditiously. The graph can be readily adapted to the height of eye for any vessel by use of the accompanying table, thus permitting the distance of the vessel from the lighthouse to be read off directly from the graph without correcting for height of eye.

(1) Height of Eye	(2) First Block *(a)* of Mile Scale
12 feet	4
16 feet	5
24 feet	6
33 feet	7
44 feet	8
55 feet	9
70 feet	10
85 feet	11
100 feet	12

Adaptation to Vessel. (Figure 1)* For adapting the graph to the height of eye of a particular vessel enter column (1) of the table at the figure nearest the height of eye on that vessel and take out the corresponding whole number from column (2). Write this figure from column (2) in the first block *(a)* of the horizontal mile scale at the top of the graph and then, beginning with this figure, number each block consecutively to block *(y)*. As an example, on a vessel with a bridge height of eye of forty-five feet, enter column (1) of the table at forty-four feet and take out the figure eight corresponding. The first block *(a)* of the mile scale will therefore contain the figure eight, and the other blocks will be numbered consecutively to block *(y)* which will contain Figure thirty-two. This graduation may be considered final and the graph now adapted to the height of eye on the bridge of that particular vessel (forty-five feet). It will furnish directly without further change the distance in nautical miles to lights just ap-

* Figure 1 is prepared with height of eye of forty-five feet to serve as an illustration of the graduation of the mile scale and should not be used with any other height of eye. For any other height of eye use table adapted to the proper height and fill in top row with appropriate figures.

pearing above the horizon to an observer on that vessel.

Use of Graph.—With the height of the lighthouse taken from the chart or from the light list, enter the column of feet on the right hand side of the graph at a position corresponding to the height of the lighthouse, estimated to the nearest foot; proceed horizontally to the left to an intersection with the curve, and thence vertically upward to the mile scale at the top of graph. The value in the nearest block is the distance from the lighthouse in nautical miles. Examples with the graph adapted to a height of eye of forty-five feet will serve to illustrate its use.

(a) The light from a lighthouse 130 feet in height is raised on the horizon. Required the distance of the vessel from the lighthouse at the time.

Enter the column at the right side of the graph (Figure 1) at the horizonal line corresponding to 130 feet; proceed to the left to an intersection with the curve, thence vertically upward to the mile scale at the top of the graph. The value in the nearest block of the nautical mile scale is twenty-one, which is the approximate distance of the vessel in nautical miles from the lighthouse. It will be found that Table 6 gives the distance for this example as 20.8 nautical miles.

When a distance falls between two blocks, tenths of miles may be estimated if desired, but this precision is scarcely warranted because of uncertainties in the observation due to abnormal refraction at times.

(b) The light from a lighthouse 250 feet in height is raised on the horizon. Required the distance of the vessel from the lighthouse at the time.

Proceed in a similar manner. The value in the nearest block is 26 which is the approximate distance in nautical miles of the vessel from the lighthouse. The use of Table six gives this distance as 25.9 miles.

(c) The light from a lighthouse 310 feet in height is raised on the horizon. Required the distance of the vessel from the lighthouse at the time.

Using the graph and estimating between blocks, 28.2 nautical miles is the distance from the lighthouse. Table 6 gives the distance as 27.8 miles.

Using various heights of eye, a comparison of the values obtained from the graph with those from Table 6, *American Practical Navigator,* will reveal an agreement within less than half a mile for height of eye nearest the values in column (1) of the table, and within less than a mile for heights of eye farthest from those values. Absolute reliance within several miles should never be placed in any position obtained by means of visibility of objects at sea, because of abnormal refraction at times in the atmosphere near the surface of the ocean. The precision of a graph adapted to a close approximation of the height of eye for use on shipboard is commensurate with the circumstances of observation.

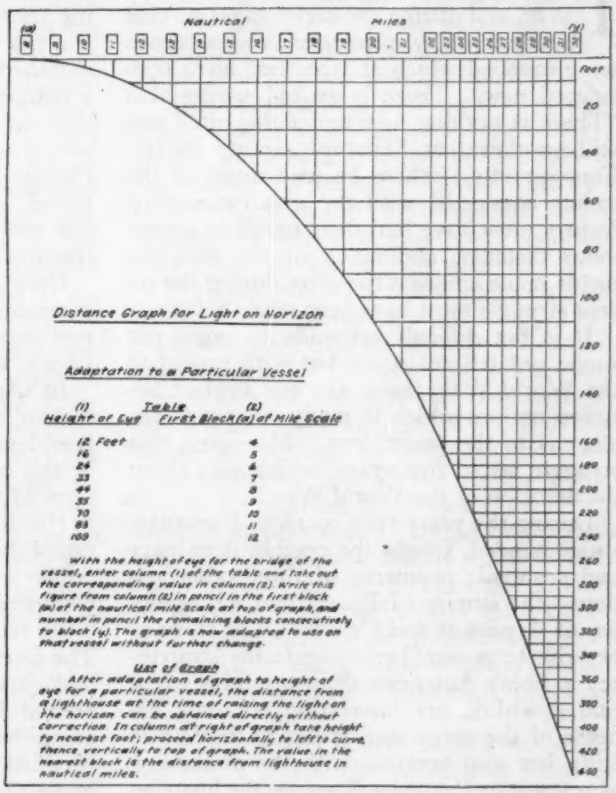

Nautical
Miles
Feet
Distance Graph for Light on Horizon
Adaptation to a Particular Vessel
Table
(1) Height of Eye
(2) First Block (a) of Mile Scale
12 Feet 4
16 5
24 6
33 7
44 8
57 9
70 10
83 11
100 12
With the height of eye for the bridge of the vessel, enter column (1) of the table and take out the corresponding value in column (2). Write this figure from column (2) in pencil in the first block (a) of the nautical mile scale at top of graph, and number in pencil the remaining blocks consecutively to block (y). The graph is now adapted to use on that vessel without further change.
Use of Graph
After adaptation of graph to height of eye for a particular vessel, the distance from a lighthouse at the time of raising the light on the horizon can be obtained directly without correction. In column at right of graph take height to nearest foot; proceed horizontally to left to curve, thence vertically to top of graph. The value in the nearest block is the distance from lighthouse in nautical miles.

FIGURE 1

NOTE: The above method was suggested by the graph used for determining the height for triangulation signals for long lines, devised by Dr. Wm. Bowie, Chief, Division of Geodesy, U. S. Coast and Geodetic Survey.

World War Analogies Fifty Years Before

By COMMANDER A. T. BEAUREGARD, *U. S. Navy*

IMMEDIATELY preceding the World War, and during the early stages of that conflict, many principles and methods were invoked which at that time were considered new. There is an old saying that "There is nothing new under the sun," and still another that "History repeats itself." Consequently if these be true many of the events connected with the greatest war of history must have had their parallels in previous disputes, and many of the arrangements made amongst the allies during the recent struggle must have been made before.

It is not difficult generally to point out single isolated analogies, but with regard to the World War, there was one conflict between nations which in many ways was analogous to the recent war. Moreover, this struggle lasted five years, which was about the duration of the World War.

During the years 1865 to 1870, Paraguay, single handed, fought the combined military and economic resources of three other nations—the empire of Brazil, and the republics of Argentine and Uruguay. The story of her rise to power, her struggle for supremacy in South American affairs, and her eventual downfall, are interesting not only because of the many similarities to the World War, but also because, with the awakening of interest in Pan-Americanism, the histories of the countries of South America come more and more into prominence.

In March 1811, Paraguay proclaimed her independence from Spain. She was the last country of the old viceroyalty of the River Platte—up to that time a Spanish colony.

Republican in form, the government was administered by a "junta" of three members.

In 1813, the power passed into the hands of two consuls, very much according to the old Roman system, and the following year, a lawyer named Francia, who had been active in governmental affairs since independence, was elected dictator for five years. In 1816, a Congress elected him absolute dictator for life.

Francia possessed an active and organizing spirit and endeavored to develop the resources of his country. With the revenue obtained from taxes and customs, he created a military organization based upon compulsory service followed by service in the reserves without limit as to age. During his régime, Paraguay remained in complete isolation, avoiding commercial relations with her neighbors, and thriving upon her own resources.

Upon the death of the dictator in 1840, the government passed again into the hands of two consuls, Mariano Alonzo and Carlos Lopez, who were elected for three years.

In 1844, Carlos Lopez, imitating his predecessor, succeeded in having himself elected president for ten years, and at the expiration of this term, he was reëlected for a second term of ten years.

His advent into power was marked by the establishment of the different branches of public administration, the development of commerce with foreign nations, and an efficient reorganization of the military forces. The army was well drilled and equipped and was capable of rapid expansion due to the annual exercises held by the reserves. To complete the defense of the country, Lopez fortified Asuncion, the capital, and also many places along the cliffs of the Paraguay River. He likewise created and organized a navy. Carlos Lopez appears to have armed his country only for eventualities. He did not attempt to provoke or precipitate a conflict.

He died in 1862, bequeathing his power to his son, Francisco Solano Lopez, who was without difficulty duly elected by the Congress.

Solano Lopez found the treasury in excellent condition and the country prosperous. Historians differ in their opinions of his aims but as he was imbued with an intelligent and ambitious spirit, he must have dreamed of extending the frontiers of his country, and possibly of the formation of

a confederation composed of Paraguay, the Argentine provinces of Entre Rios and Corrientes, and the republic of Uruguay. With this confederation, of which he naturally expected to be the head, his domains would then extend to the Atlantic and could rival the empire of Brazil. For the expansion and further importance of his country he appreciated the need of securing access to the sea.

But the realization of his dreams, if such they were, could not take place without the resort to arms, and he was well aware of this fact. Therefore using the unlimited power which he possessed, he labored above all to increase and to perfect the military forces of his country. Foreign officers were employed to instruct his army, and mechanics hired from England to work in the shops. He sent young Paraguayan officers to Europe to study the art of war. The arsenal at Asuncion worked night and day, and at the same time a large quantity of arms, ammunition, and other war material was purchased from abroad and stored in Paraguay. The fortifications on the banks of the Paraguay River were reënforced and the navy increased to fourteen well drilled ships. The reserves carried out prescribed regular exercises. As a result of this policy, this little country in 1864, with a population of about 1,500,000, maintained a perfectly drilled and well equipped army of 92,000 men in addition to a large trained reserve. Paraguay was truly a nation prepared for war.

All of these preparations for war were made with the greatest secrecy. In Argentine and in Brazil, reports received on these matters were believed to be greatly exaggerated. These governments could not be persuaded that Paraguay possessed such a formidable army, and furthermore could not conceive that Paraguay should be preparing an offensive against the two of them or even against one of them.

It was at this time that the empire of Brazil, in order to defend the interests of Brazilians resident in Uruguay, found it necessary to intervene in Uruguayan affairs. Brazil attempted to exact from the Uruguayan government in control at Montevideo promises that certain outrages against her citizens should cease, and later to demand that reparation should be made for insults against the Brazilian flag which had taken place in Montevideo.

Lopez, the dictator of Paraguay, who had styled himself the protector of the republics of the River Platte, offered his services as mediator in a note addressed to the government of Brazil on June 11, 1864. The Brazilian government in reply, thanked him for his proposals but stated "that it entertained the most satisfactory hopes of securing an amicable solution directly with the government of Uruguay."

However, proper satisfaction in the opinion of Brazil not having been offered or guaranteed by the government at Montevideo, the Brazilian government on August 4, 1864, presented an ultimatum. In this note, Brazil stated that, as satisfactory reparation and guarantees had not been given, she considered herself obliged to resort to military measures in defense of her citizens in Uruguay who were threatened with their lives or the seizure of their property.

The Paraguayan dictator, upon receiving news of the ultimatum, felt his personal pride wounded, and his prestige and importance disregarded. On August 30, he therefore addressed a note to the Brazilian government to protest against the action of Brazil, declaring "that he could not view with indifference nor tolerate the occupancy of a part of the territory of Uruguay, either temporarily or permanently, by the forces of the empire of Brazil, and that he would consider such occupation of Uruguayan territory by Brazilian forces as disturbing the equilibrium of the states of the River Platte, whose status vitally affected the republic of Paraguay in respect to its security, peace and prosperity."

Sometime later it became known that Lopez had a secret agreement with President Aguirre of Uruguay, which afforded Lopez the necessary occult reasons for transmitting such a message to Brazil.

Notwithstanding this protest, the Brazilian ultimatum stood; and in order to force the government at Montevideo to render the demanded satisfactions, Brazilian forces entered Uruguay and occupied the town of Melo.

The temporary occupation of Uruguayan territory by Brazil was considered by the government of Paraguay as an aggressive and provocative act. Lopez declared, therefore, in a note under date of November 12, that "in view of a provocation so direct, relations with the government of Brazil are broken, and navigation, for any purpose

whatever, in the waters of Paraguay, is hereby consequently forbidden to ships of the empire of Brazil, national or merchant."

In this connection it must be remembered that communication with the Brazilian province of Matto Grosso was ordinarily made by means of the Paraguay River. Lopez had at last found a pretext for declaring the war for which he had so ardently prepared.

The note above referred to was received by the Brazilian legation at Asuncion on the evening of November 13. On the morning of that day, a Paraguayan man-of-war captured a Brazilian merchant ship some thirty miles above Asuncion. The crew and passengers were made prisoners and interned, the cargo confiscated, and the ship considered a good prize. The ship of course had no knowledge of the situation and was in no way guilty of a violation of war principles.

In the meantime a revolutionary movement broke out in Uruguay.

On December 13, President Aguirre of Uruguay closed the ports of Uruguay to Brazilian commerce. After this act, the government of Brazil recognized as a belligerent, General Flores, head of the revolutionary movement in Uruguay and of the party favorable to Brazil.

On December 14, a corps of the Paraguayan army invaded Brazil.

On account of slow and difficult communication, it was not until the latter part of January, 1865, that Brazil, accepting the war, sent to the Argentine government and to the diplomatic corps accredited to Rio de Janeiro, a note in which after reviewing the history of events, the following declaration was made:

> In view of these provocative acts, so often repeated, the responsibility for the war caused between Brazil and Paraguay rests entirely with the government at Asuncion. The government of His Majesty will repel the aggressor by force. But, reserving its legitimate rights, the Imperial government *will not confuse the Paraguayan nation with the Paraguayan government,* the latter having exposed the former to the hazards of an unjust war, and the Imperial government will maintain itself, as a belligerent, within the limits prescribed by its civilization and its international agreements.

At this period the success of the revolutionary party in Uruguay in February 1865, caused President Aguirre, ally of Lopez, to abandon the government in favor of General Flores, chief of the revolutionary movement and ally of Brazil.

The government of Argentine, having refused permission for Paraguayan soldiers to cross the province of Corrientes in order to invade Brazil, the dictator, Lopez, ordered on April 17, 1865, the capture of the Argentine ship *Salto* then in the port of Asuncion. At the same time a *Paraguayan army invaded Argentine territory and occupied the city of Corrientes before declaring war.*

In order to defend its territory and avenge the affront received, Argentine was obliged to enter the conflict, and accordingly, there was signed by the allies at Buenos Aires on May 1, 1865, a *defensive and offensive alliance against Paraguay.*

This alliance stipulated that *the war was against the Paraguayan government, not the Paraguayan people, and that the independence, sovereignty, and territorial integrity of Paraguay would be respected.*

In the alliance no single objective was imposed upon the allies. It was simply agreed that *the allied forces should have a single commander-in-chief,* and for political reasons this was confided to General Mitre, president of Argentine.

The commander-in-chief of the naval forces, independent of the commander-in-chief of the armies, was confided to Vice-Admiral Tamandare of the Brazilian navy.

In a protocol to the alliance, it was agreed that the fortifications of the Paraguay River should be destroyed and that the arms and war material of Paraguay should be seized so as to leave her incapable of inflicting further damage.

The Paraguayans assumed the offensive by invading Argentine, Uruguay, and the South of Brazil. The allied fleet, principally Brazilian, was given the task of forcing its way up the Parana and Paraguay Rivers, and, supported and paralleled on shore by the army, causing the invading forces to retire by cutting them off from their bases. The initial efforts of the allies were successful and by forcing the passage of Corrientes on the Parana River, the Paraguayan invading armies retired to their bases.

The Brazilian fleet then anchored off Riachuelo, near the junction of the Parana and Paraguay Rivers, whereupon Lopez planned a surprise attack against this force. On the early morning of June 11, 1865, nine Paraguayan vessels, towing rafts upon which guns were mounted, left Asuncion with the idea of surprising the Brazilian

ships at daylight. The cliffs on the Paraguayan side of the river near where the Brazilians were anchored had been secretly fortified, so that Lopez expected great results from his navy. Unfortunately for him, the surprise element failed, as the Paraguayan fleet only reached Riachuelo about nine o'clock in the morning. In the ensuing battle, the Paraguayans were decisively beaten, whereupon their remaining ships returned to Asuncion, and the commander of the expedition, the aged Commodore Mezza, was promptly executed by the irate Lopez.

The progress of the allies up the river was slow but sure. There were many fortifications to be passed and close coöperation between the shore and river forces was necessary to insure success. Despite the difficulties of communications, fortification after fortification was seized and the allied forces ascended the river in the direction of Asuncion.

Lopez made vain efforts to stop the approach of the allies. On various occasions, the Paraguayans screened small boats with foliage to give the appearance of floating islands which often passed down the river, and taking advantage of the current, dropped down on the unsuspecting Brazilian ships. On one of these occasions twenty small boats, each carrying fourteen picked men, dropped down the river in the dead of night, *each boat carrying large numbers of tubes loaded with asphyxiating gases* which it was proposed to hurl aboard the Brazilian ships and then board them. The attack was, however, discovered in time by the Brazilians and the plan failed of success.

In 1866, the allies passed the fortifications of Curuzu, in 1867 Curupaity, in 1868 Humayta and finally in 1869 the allies closed in on Asuncion, which was finally captured, Lopez fleeing with his remaining force to the north.

On March 1, 1870, the last Paraguayan encampment was attacked by the Brazilians, and Lopez, who had been continually withdrawing northward, retired to the Aquidaban River. While in the act of fording this river with a small company of followers, he was shot by a Brazilian soldier. His death brought an end to the war.

The population of Paraguay prior to the war was about 1,500,000. At the end of the war this population had been reduced to some 220,000, of which 30,000 were men and 106,000 women over fifteen years of age. The dictator had indeed depopulated his country in the sanguinary struggle.

Although the offensive and defensive alliance signed by the allies contained a clause guaranteeing the independence, sovereignty, and integrity of Paraguay, it also contained a clause which stated that at the end of the war Paraguay was to be required to execute boundary treaties with Brazil and Argentine.

Prior to the war, Brazil had had disputes with Paraguay concerning the international boundary in that region lying between the Parana and Paraguay Rivers. The boundary between Argentine and Paraguay had never been clearly established since the dismemberment of the old viceroyalty of Buenos Aires and the separation of Paraguay from Buenos Aires. Consequently, there were included in the alliance provisions for the settlement of these disputes upon bases satisfactory to Brazil and Argentine. As a matter of fact, the territory promised Argentine was all of that part of Paraguay that lay north of the Bermejo River and west of the Paraguay River.

Upon the death of Lopez and the occupation of Asuncion by the allies, a provisional government favorable to the allies was set up in Paraguay.

The first act required of the provisional government was the ratification of the triple alliance which had been executed by the allies. The Paraguayan government complied with this demand and thereby established a basis for peace negotiations.

During the negotiations of the peace treaty at Asuncion, and after the preliminary deliberations, the Argentine plenipotentiary introduced the question of boundaries which he considered should be taken up and included in the general peace treaty. The representatives of Brazil and Uruguay declared that the question of boundaries was not a *casus fœderis* of the war and that the inclusion of the question of boundaries in the alliance was simply to insure that *after the war,* Paraguay would settle the question of her frontier *independently* with both Argentine and Brazil "in order to avoid future discussions and wars resulting from boundary disputes."

Argentine adhered to her opinion that the entire subject of boundaries should be settled by the allies acting in unison, whereas Brazil maintained that she felt neither competent nor willing to discuss boundary disputes between Argentine and Paraguay,

about which she knew nothing, and that she did not acknowledge the competency of Argentine to discuss her own claims against Paraguay. Uruguay sided with Brazil and the progress of peace negotiations was much delayed.

Finally on November 6, 1871, the treaty of peace was signed, which, among other things, specified that boundary questions would be settled by separate treaties.

Brazil obtained directly from Paraguay a settlement satisfactory to herself of the boundary dispute in that region lying between the Parana and Paraguay Rivers.

Argentine, claiming from Paraguay such an immense amount of territory, was not able to negotiate satisfactorily with the Paraguayan government, probably due to a certain extent to the apparent non-support of Argentine by Brazil. Consequently, the matter was left to the arbitration of the President of the United States (President Hayes), who decided that the territory north of the Pilcomayo River rightly belonged to Paraguay. Argentine secured the territory between the Pilcomayo and Bermejo Rivers, and the territory of Missiones, between the Uruguay and Parana Rivers.

From the above brief history of this South American struggle, the following situations may therefore be pointed out as analogous to World War events:

1. For a number of years Paraguay devoted itself to the creation of a militaristic power for the express purpose of conquest and territorial expansion.

2. The pretext to put the Paraguayan war machine into action was a dispute between two other countries in which Paraguay, except by secret treaties, was not concerned.

3. In order to invade Brazil, Paraguay requested of the Argentine government, authority to transport troops across the Argentine Province of Corrientes. As Argentine at that time was neutral, this request was properly denied, whereupon Paraguay deliberately invaded and seized Corrientes, thus forcing Argentine into the war.

4. The allies—Brazil, Argentine and Uruguay—declared that they were making war upon the Paraguayan government and not upon the Paraguayan people.

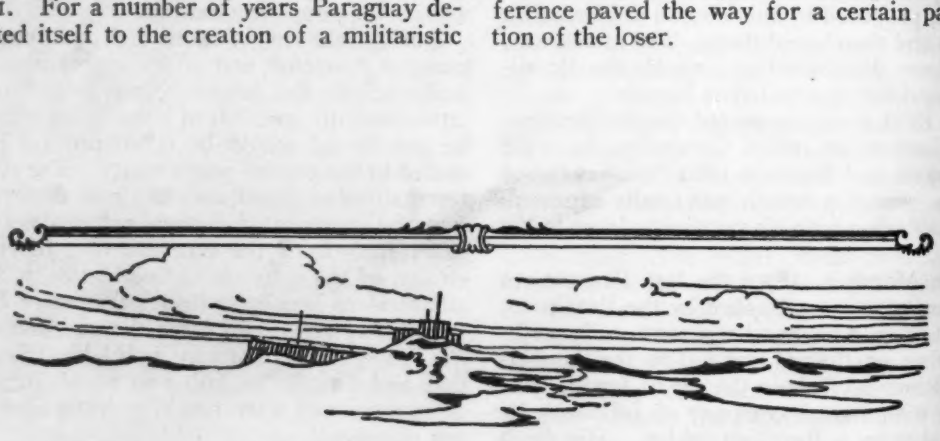
5. The allies signed an offensive defensive alliance agreeing not to execute a separate peace.

6. The allies agreed in the offensive-defensive alliance to respect the independence, sovereignty, and territorial integrity of Paraguay.

7. The allies agreed upon unity of command in the army and unity of command in the navy.

8. Poisonous or asphyxiating gases were used.

9. Despite early ideals of the allies with regard to respecting the territorial integrity of the enemy, developments at the peace conference paved the way for a certain partition of the loser.



The Sacred Calabash

By Rear Admiral Hugh Rodman, *U. S. Navy (Retired)*

The Road to Tahiti

SOME twenty odd years ago, when stationed in the Hawaiian Islands in command of a small vessel, I was engaged in correcting the existing charts and sailing directions of these waters and bringing them up to date. This led to more or less of an interest in the spelling and meaning of some of the native names, not the least of which was the channel between the islands of Lanai and Kahoolawe, and also the extreme southern point of the latter named island, both of which are called Ke-ala-i-Kahiki, and which being translated means, "The Road to Tahiti."

This incited my curiosity, and upon asking one of my acquaintances, who was born in the islands and spoke Hawaiian perfectly, to verify the translation, he explained to me the reason for so naming this channel and point, which in turn developed other and still more interesting information, and which eventually led to solving scientifically the mystery of the "Sacred Calabash."

According to his story, which is undoubtedly true, there was communication by sea in open native boats between Hawaii and Tahiti, a distance of more than 2,300 nautical miles, over the broad ocean, mainly for the purpose of paying friendly visits—for Tahiti had the reputation of being a land of plenty, and the natives were noted for their lavish hospitality to strangers.

Similarity in Languages

At the same time it offered a means of felicitation and exchange of friendly messages between the high chiefs, and served to perpetuate an intercourse between these groups of islands which had the same basic language. The Hawaiians, Samoans, Tahitians, Tongans, Marquesians, Maories in New Zealand, and certain other islanders, come under this head, and a native of any one of these groups will have but little difficulty in making himself understood by a native of another.

There are a great many words which are common to all these languages, and many more which become the same by the change of a single letter. For example, the *t* in Samoan would become *k* in Hawaiian, and *f* becomes *h*. That is, *tapa,* the native cloth, becomes *kapa; fale,* the word for house, becomes *hale,* and the salutation in Samoa, *talofa* becomes *aloha* in Hawaiian.

In further explanation of the name Ke-ala-i-Kahiki, this gentleman, a very scholarly man who had written a history of Hawaii, said that the sailing of these canoes was always celebrated as a great event, and that it was preceded by feasting, dancing and other ceremonies.

Preparing for the Voyage

The men who composed the crews were specially chosen for their strength, physique, prowess, endurance, skill as swimmers, in handling boats, and in catching fish and birds at sea and their knowledge of navigation and kindred subjects.

Months before sailing they were put through a course of tests including the performance of a maximum endurance on a minimum of food and water, in sailing and handling boats under adverse conditions; in righting them when capsized, and in their knowledge of astronomy and meteorology. The Hawaiians had a fair visual knowledge of the former; they knew that the sun changes its declination; that the North Star is approximately fixed, and upon this fact, in connection with the Sacred Calabash, depends the principal point of interest in this story.

Their Knowledge of Astronomy

They had names for the brighter stars and constellations, and knew that the planets were wanderers and so called them in their native tongue. As a matter of fact the North Star is not exactly at the celestial pole in the extension of the earth's axis, but is about a degree or so from it, although the

revolution of the earth on its axis brings the North Star on the meridian twice a day. However, for crude navigation and for the purposes of this story, we will consider the North Star as being at the pole or 90° from the equator. In order to better understand

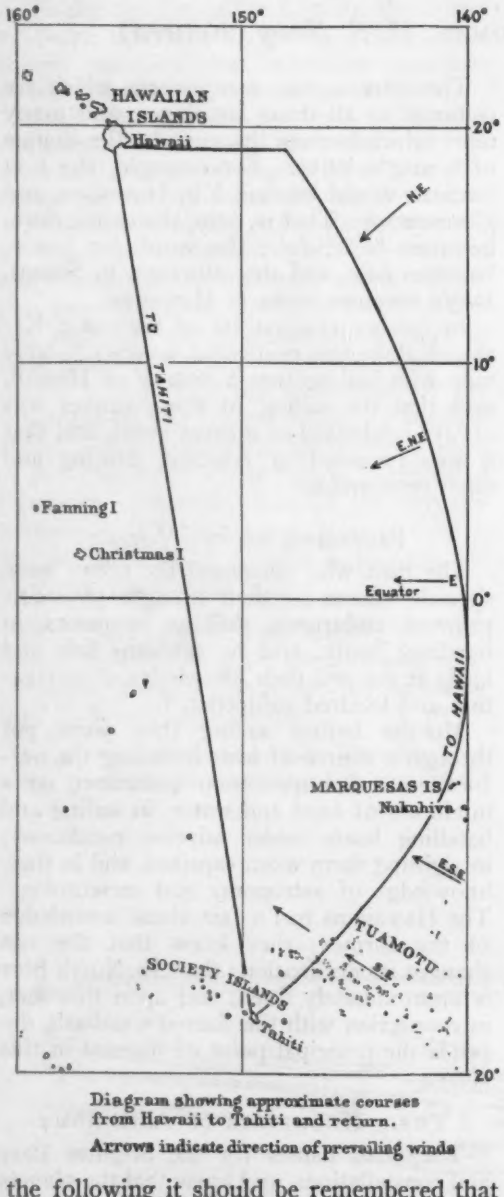


Diagram showing approximate courses from Hawaii to Tahiti and return.

Arrows indicate direction of prevailing winds

the following it should be remembered that one of the usual methods of finding latitude at sea, in the northern hemisphere, is by measuring the altitude of *Polaris*, or the North Star, and applying certain corrections to obtain the exact latitude.

Roughly speaking, if one were at the north pole, *Polaris* would be in the zenith or 90° overhead, and as one proceeds south from the pole every degree of latitude covered reduces the altitude just the same amount, and upon reaching the equator, the altitude would be zero. It follows that the latitude of any place in the northern hemisphere, is roughly equal to the altitude of *Polaris*.

Owing to the geographical position of Hawaii (in approximately 19° 30′ N.), in addition to the stars of the northern hemisphere, most of those in the southern hemisphere, except the circumpolar ones, were also visible and familiar to the natives. They had a very fair conception of the movements of the stars, and were taught how to shape their courses at night by them, and by the sun during the day, making due allowance for changes in azimuth.

Their Knowledge of Meteorology

In the way of meteorology, living in the trade-wind region, and as their voyage would be wholly within the trade belt, they were familiar with all conditions pertaining to it. They knew that the direction of the wind varied between northeast and southeast, depending upon the season, and that certain seasons of the year were more propitious than others for making long sea voyages.

In order to more fully comprehend the wonderful accomplishment of these primitive natives, and to appreciate their endurance, resourcefulness, seamanship, and navigation, in making this extraordinary voyage without any of the modern aids to navigation, out of sight of land for nearly the whole distance, it is necessary to familiarize one's self with the geographic location of these islands. Roughly, Hawaii is in latitude 19° 30′ N., longitude 156° 00′ W., and Tahiti, latitude 17° 30′ S., longitude 149° 30′ W., which makes the outbound course a little east of south, and the distance over 2,300 nautical miles.

When the crew were considered to be in proper physical condition and when the season was most propitious, the canoe was fully equipped and loaded with such provisions as would take the least space and yet give the greatest amount of sustenance. The Sacred Calabash was taken on board amidst a grand celebration in honor of the event,

and after invoking the gods and making offerings and sacrifices.

A native historian of the Hawaiian Islands states that among the instructions given to the crew before making this voyage were: "If you sail for Kahiki (Tahiti) you will discover new constellations and strange stars over the deep ocean. When you arrive at *Piko-o-wakea* (Equator) you will lose sight of *Hoku-paa* (North Star) and *Newe* will be the southern guiding star, and the constellation *Humu* will stand as a guide above you."

Knowledge of Navigation

There were those among the crew who were especially versed in navigation from every angle known to these people; under their advice and guidance the instructions were to steer by the sun by day and the stars by night, principally *Polaris*, on a course a little to the east of south. This at night would be accomplished by keeping *Polaris* several degrees to the left of a north and south course. Furthermore, when the celestial bodies might be obscured by clouds, knowing that the winds were generally easterly, they were to keep on the port tack; or keep the wind on the port side.

They also had an intimate, in fact almost uncanny, knowledge of the looks and action of the sea, that is the effect on the waves of the strength of the wind, its duration from any one direction, or changes in direction. Still more wonderful, and I have actually seen it demonstrated, they could tell the direction of the land by its action in changing the continuity or general symmetry of the waves. For example, in one of the south sea groups we hired a pilot for his local knowledge in entering the harbors of the different islands. Often without telling him our destination, in going from one island to another, and before sighting land, I have called him on deck and asked its direction, and he invariably pointed correctly, although, as in several other equally as remarkable exhibitions of his extraordinary developed facilities, he was unable to explain how his conclusions were reached.

Nor could any of the natives in any of the groups give a clear explanation of their combination geographical and astronomical charts, which in general consisted of a number of thin strips or battens of light wood lashed or seized by cord at their crossings, and to which, here and there, at these crossings and elsewhere, were a number of shells some of which were movable.

Science or Instinct?

Unquestionably these islanders had developed their powers of observation and analysis of phenomena pertaining to the sea, atmosphere, and heavens to a marvelous degree, and had put them to practical use. We find this development of faculties along useful lines among many aboriginal tribes and primitive people.

The bushmen of Australia, among the lowest known order of human beings, have the ability to follow the trail of man or beast that would baffle any other person, no matter what might be his intelligence or knowledge in other directions.

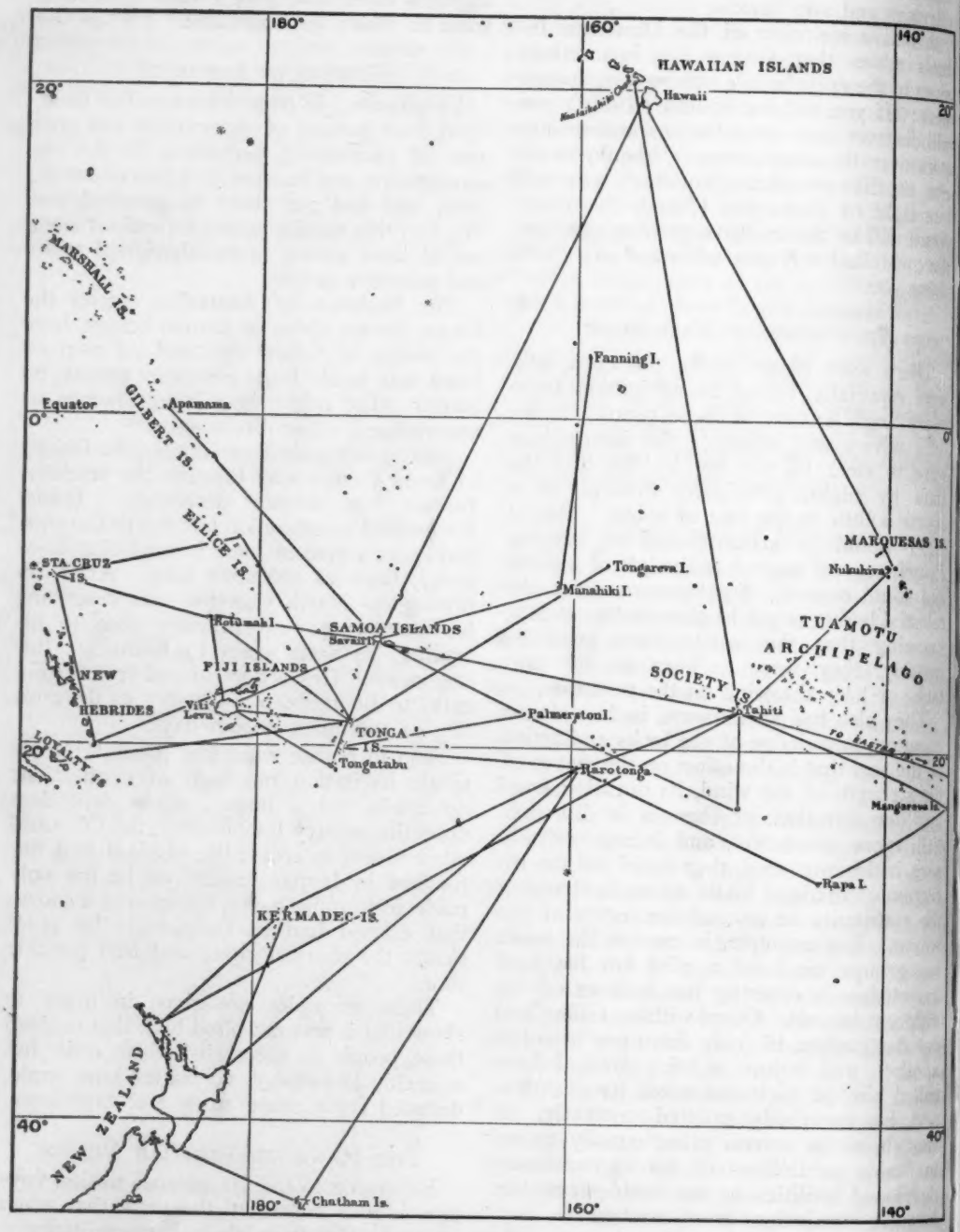
Among our early frontiersmen the faculty of finding one's way through the trackless forests was keenly developed. Daniel Boone with a companion left North Carolina and spent a year or more in exploring Kentucky, then an unknown land. After returning to North Carolina and describing his wanderings and previous visit to his brother, he went again to Kentucky, this time alone. He once journeyed from Chillicothe to Boonesboro, a distance as the crow flies of 160 miles, in four days.

Stop to realize what this means! Not a single habitation nor sign of civilization; no roads, not a house; solely dependent upon the country for his food; the Ohio and other rivers to cross; the virgin forest untouched by human hands; yet he not only made forty miles a day, but steered a course that carried him to Boonesboro by practically the shortest route and best possible time.

These examples are given in order to show that it was not blind luck that enabled these people to accomplish their ends, but scientific knowledge, no matter how crude, deduced from actual study and experience.

The Hawaiian-Tahitian Voyage

Returning to the Hawaiian-Tahitian voyage, it was known to the crew that when about half way on their journey—namely, when near the equator—that they would lose the North Star, that it would sink below the horizon and that it would be necessary for them to use certain southern circumpolar constellations.



HISTORIC INTER-ISLAND POLYNESIAN VOYAGES

Here it is well to explain that, prior to the advent of the white men, the natives built enormous canoes called *pahe*. These canoes dwarf the small dug-out canoe, in general use today throughout the South Sea Islands, and which in turn are being rapidly superseded by modern boats. The *pahe* were of several classes and kinds, the largest being used for deep sea voyages and war purposes. They were both single and double and were from sixty to ninety feet in length.

The Tahitians, for example, made the hull of their canoes from the *apapi* tree, from which logs over forty feet in length were obtained and which were about three feet in diameter. These were hollowed out, joined together end on end and served as the hull to which keels of *tamanu* wood were attached, while the planking and paddles were made of *purau* wood. The double canoes were built up hulls with side planking, and so constructed that they could be housed over, or closed, in rough weather, thus making them far more sea-worthy. These hulls in turn, were joined together by braces, with an intervening space of several feet between them, and upon the whole was constructed a shelter erection both for the preservation of food, plants, and live stock carried, and for the protection of a part of the crew as well.

They were fitted with one or two masts, and carried triangular sails of native matting, in addition to full sets of paddles. Doubtless logs of a much larger size were to be found in some of the other islands, as is the case today, but the above description of the Tahitian canoe is cited because it is well authenticated.

Inter-Island Polynesian Voyages

Based upon tradition, ethnological evidence, and, in more modern times, actual facts, there were frequent and numerous inter-island voyages between the Fiji, Friendly, Samoan, Cook, and Tahitian groups of islands, which lie roughly between 10° S., to 25° S., and 175° E., to 150° W., a zone about 900 miles wide by 2,100 long. There are well authenticated records of long voyages which were made from these groups, not only to New Zealand and Hawaii, but to other out-lying islands, some of which were fully 2,000 miles distant.

Even in modern times natives in small canoes have been picked up at sea hundreds of miles from land, having been blown off shore or having lost their way in making passage. Various reasons have been assigned for these migrations and voyages, but those most generally accepted are that they were due to over population, tribal wars, scarcity of food, love of adventure, and abiding confidence in their ability as seamen and navigators, to find their way back to land in case no new islands were discovered.

There is abundant evidence that they set forth prepared to colonize any new land discovered, for they not only carried their women, but seed, food, plants, and live stock.

The South Voyage

Coming back again to the Hawaii-Tahiti voyage to the southward, they were aware that their course should carry them through several groups of low lying islands or atolls, and that on communication with any of them they could get the necessary direction and information for continuing their voyage to Tahiti.

At the end of their visit they once more provisioned their canoes and made ready for the return voyage.

The Return North

Here, let it be explained, dependent upon the season and latitude, the prevailing winds were from the southeast, in the vicinity of Tahiti, hauling by degrees to approximately northeast when in the latitude of Hawaii. And while it is true that these winds are neither steady in direction nor constant in force, they are, nevertheless, the prevailing winds. Having this information, the crew was directed to put their canoe on the starboard tack, and keep the wind abeam or a little forward of the beam. This, in plain English, means that in the long run their average course would carry them several hundred miles at least, to windward and to the eastward of Hawaii.

They were also aware that when approximately half way back on their return journey, which would be in the neighborhood of a little to the northward of the equator, they would raise the North Star, and from that time on they were to give heed to the Sacred Calabash.

The Use of the Calabash

Now, as to the Calabash itself.

It is a species of gourd over three feet in length, the bottom spherical, the barrel

cylindrical, and slightly tapering toward the top. Near the top a row of four holes had been bored on a circle, 90° apart, whose plane was at right angles to the longitudinal axis. And here it should be noted that from an inscription on the Calabash, it can be traced back through its several owners and keepers to the old days when it was in general use. (See pages XLI and XLVIII).

As they gained latitude to the northward the Calabash was to be filled with water up to the holes, and through any one of these holes, and over the opposite upper rim of the Calabash, observations were to be made on the North Star, until, still observing through the hole, it became tangent to the upper rim. When this condition obtained, the course was to be immediately changed to west. This westerly course could be altered from time to time if necessary, so that *Polaris* would remain approximately tangent, thus insuring their keeping in the approximate latitude of Hawaii and arriving at that island in due course of time.

As a matter of fact, although crude, this method of making the return voyage, and particularly the use of the Calabash for finding Hawaii, is not only based on scientific principle, no matter what may have led to its discovery and adoption, but is practically, in a modified way, one of the most general methods of finding latitude today by the North Star. In fact, a sextant may be used on the same general principle involved if it be set at a constant angle and used in the same way. (See Secretary's notes).

THE EXPLANATION

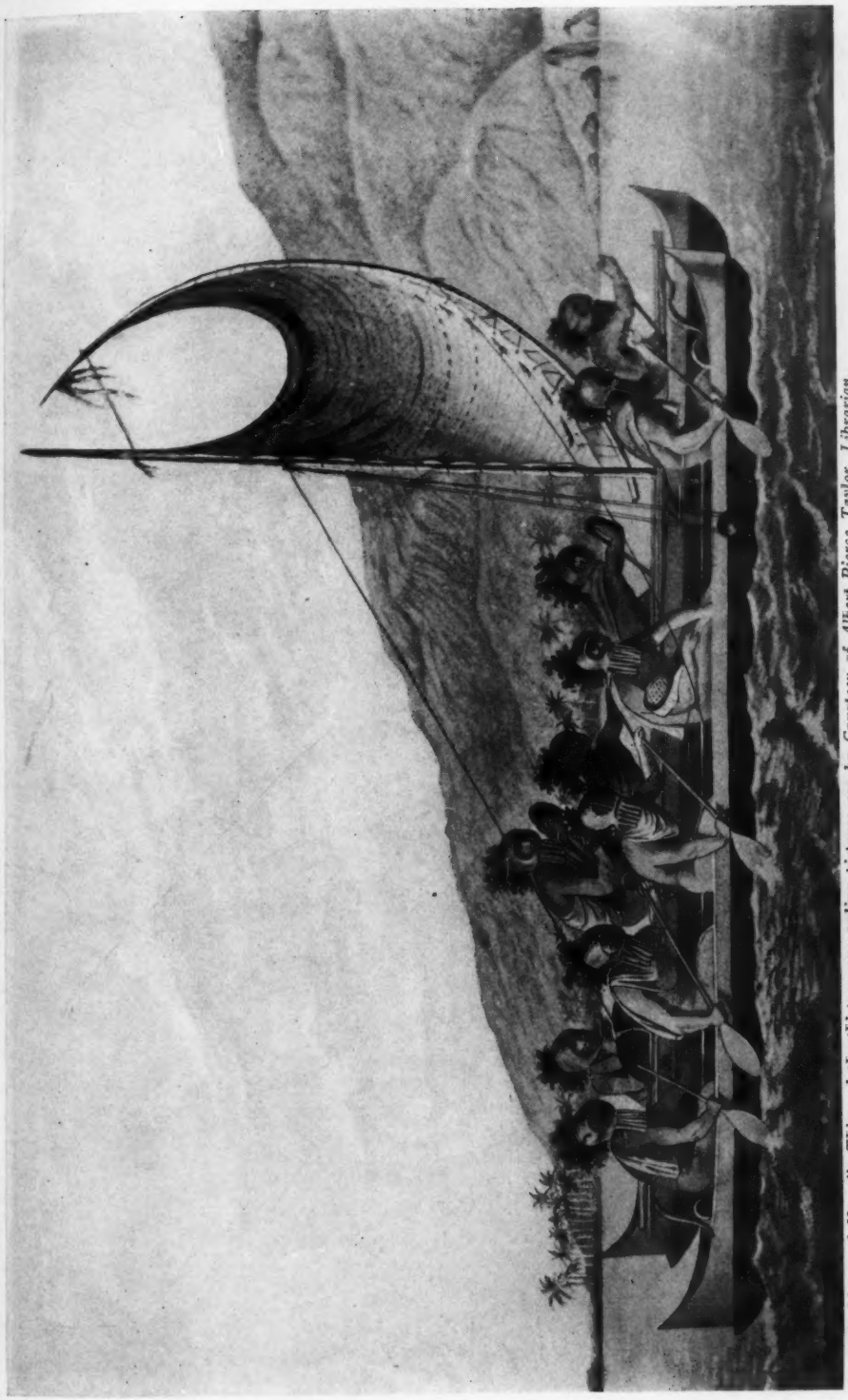
Naturally, my curiosity was aroused to see this so-called "Sacred Calabash," and to ascertain if it could be reliably used for its reputed purpose. Obtaining permission, I filled it with water to the circle of holes and measured the angle from any one of them across the opposite rim, and found it to be about 19°. The water inside acted as a level, keeping the calabash in the vertical. Thus when *Polaris* was on the rim its altitude was about 19°, which roughly equalled the latitude of Hawaii, and enabled the crew to steer west with a confidence that they would reach their destination.

It seems all but needless to call attention to the fact that the altitude of *Polaris* varies about two degrees each day, but it is equally evident that if several days were consumed in the western part of the voyage, or if when on shore more careful observations had been taken of *Polaris*, this change would have become known, and allowances made accordingly. Furthermore, Hawaii is mountainous; two of its peaks, Mauna Loa and Mauna Kea, are between 13,000 and 14,000 feet in height, and visible far out at sea. In addition to which, as is the case in general in the tropics, when the land is high there is a very distinctive cloud effect which helps to indicate its presence from its contrast to the usual trade clouds and sky effects. And a still further aid would be found in the sky in case either of the two active volcanoes, Mauna Loa or Kilauea, were in eruption and their reflections could be seen in the heavens.

There has been a vast deal of theory and speculation as to how these and other islanders traversed the broad expanse of water which separates these islands from each other, whether they originally drifted before the wind or worked their way to windward in voyages of discovery. Some of the records, like this, and the migration and voyages of what are now the Maoris, to and from New Zealand, from the vicinity of Tahiti, or Rarotonga, are authentic and well known and, to my mind, form reasonable grounds for believing that these voyages were carefully planned and executed, and were far less a matter of mere chance than they were the result of logical reasoning.

CONCLUSION

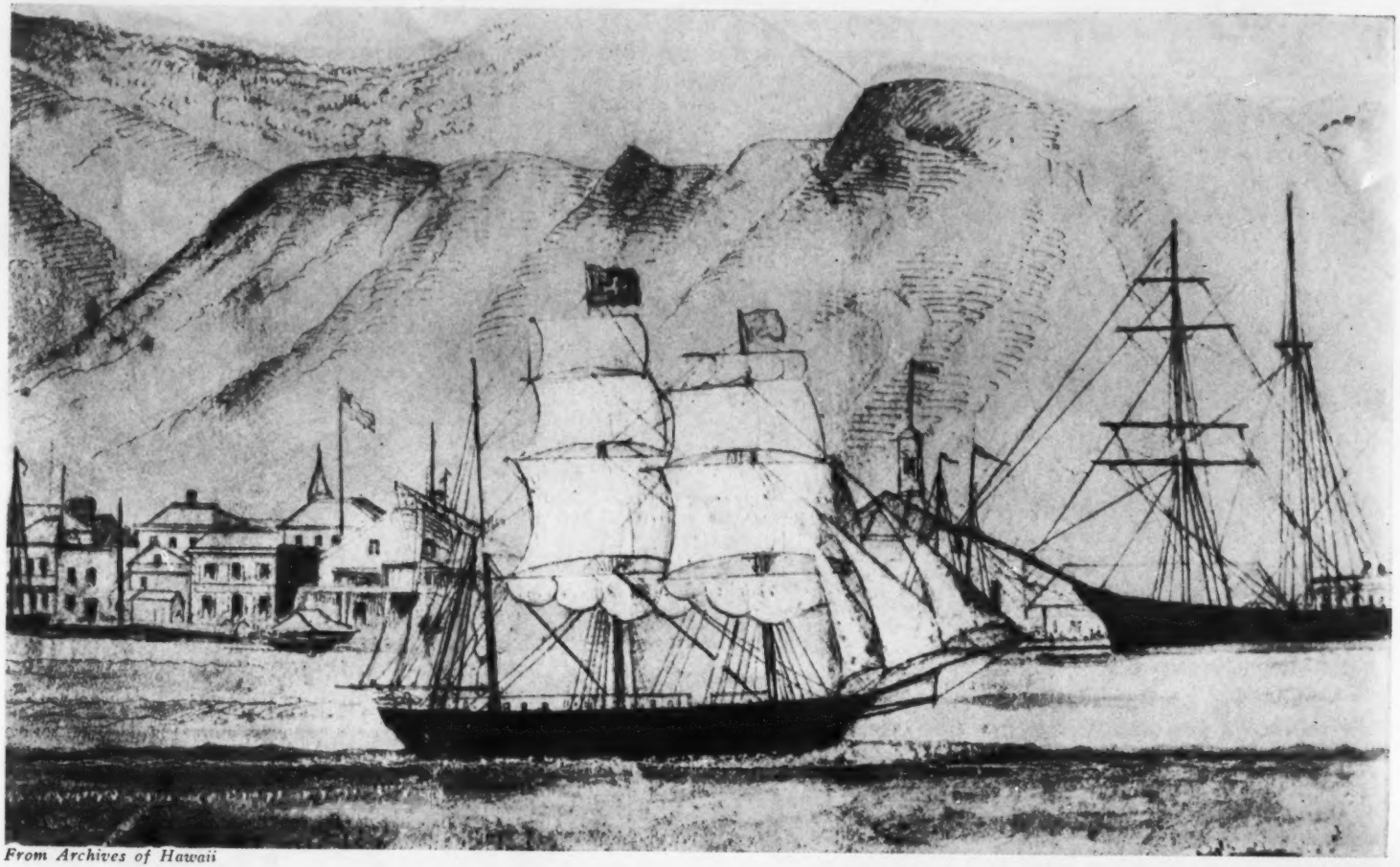
In conclusion, let it be said, that if the navigational features of this voyage from Hawaii to Tahiti and return, and the general geographic knowledge of the South Sea Islanders of their part of the world, could be compared to some of the published charts, made by early European voyagers to America, contrasting the instruments and methods of the two, that of the Polynesians would stand a very favorable comparison.



From Archieves of Hawaii—This and the thirteen succeeding pictures are by Courtesy of Albert Pierce Taylor, Librarian.

HAWAIIAN WAR CANOE—WARRIORS MASKED

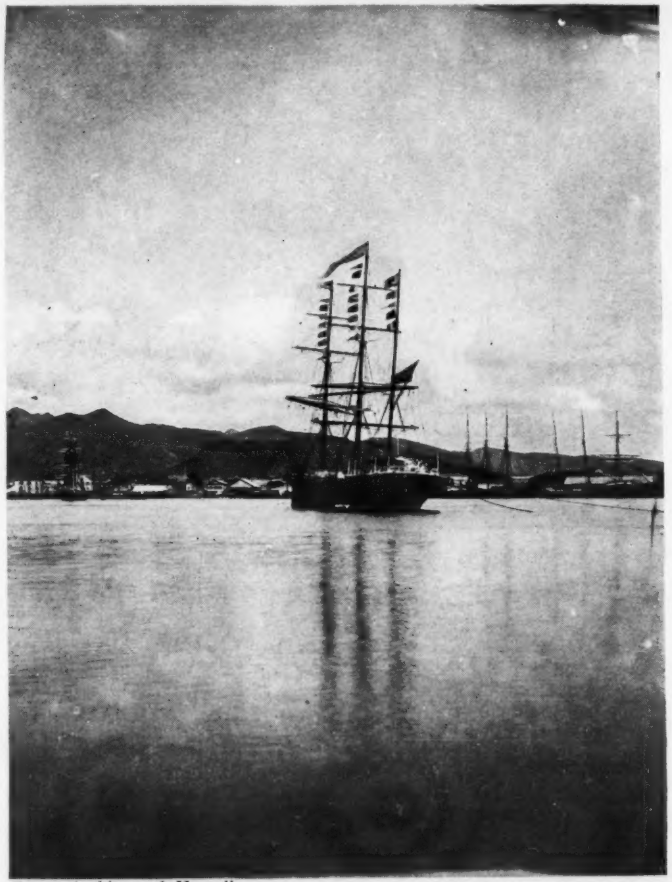
Progenitors of Modern Warships in Hawaiian Waters.



From Archives of Hawaii

HONOLULU HARBOR ABOUT THE TIME OF THE "CONSTITUTION," "CONSTELLATION," "CONGRESS" AND "UNITED STATES" IN HAWAIIAN WATERS
From a sketch, the artist omitting the middle ground. Time in the '40's.

HONOLULU HARBOR ABOUT THE TIME OF THE "CONSTITUTION," "CONSTELLATION," "CONGRESS" AND "UNITED STATES" IN HAWAIIAN WATERS
From a sketch, the artist omitting the middle ground. Time in the '40's.

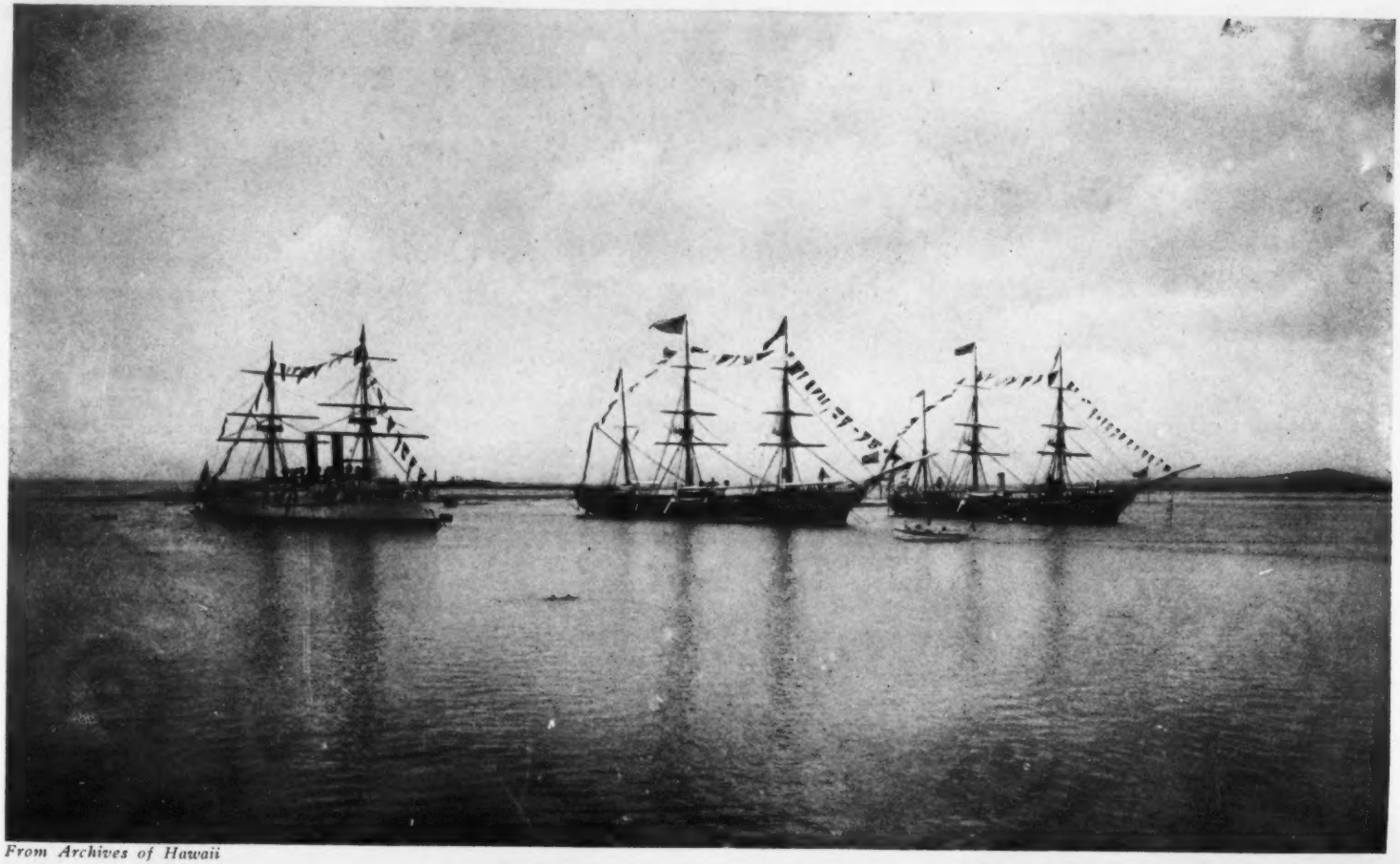


From Archives of Hawaii

"ON GUARD" DURING THE '70'S IN HONOLULU HARBOR

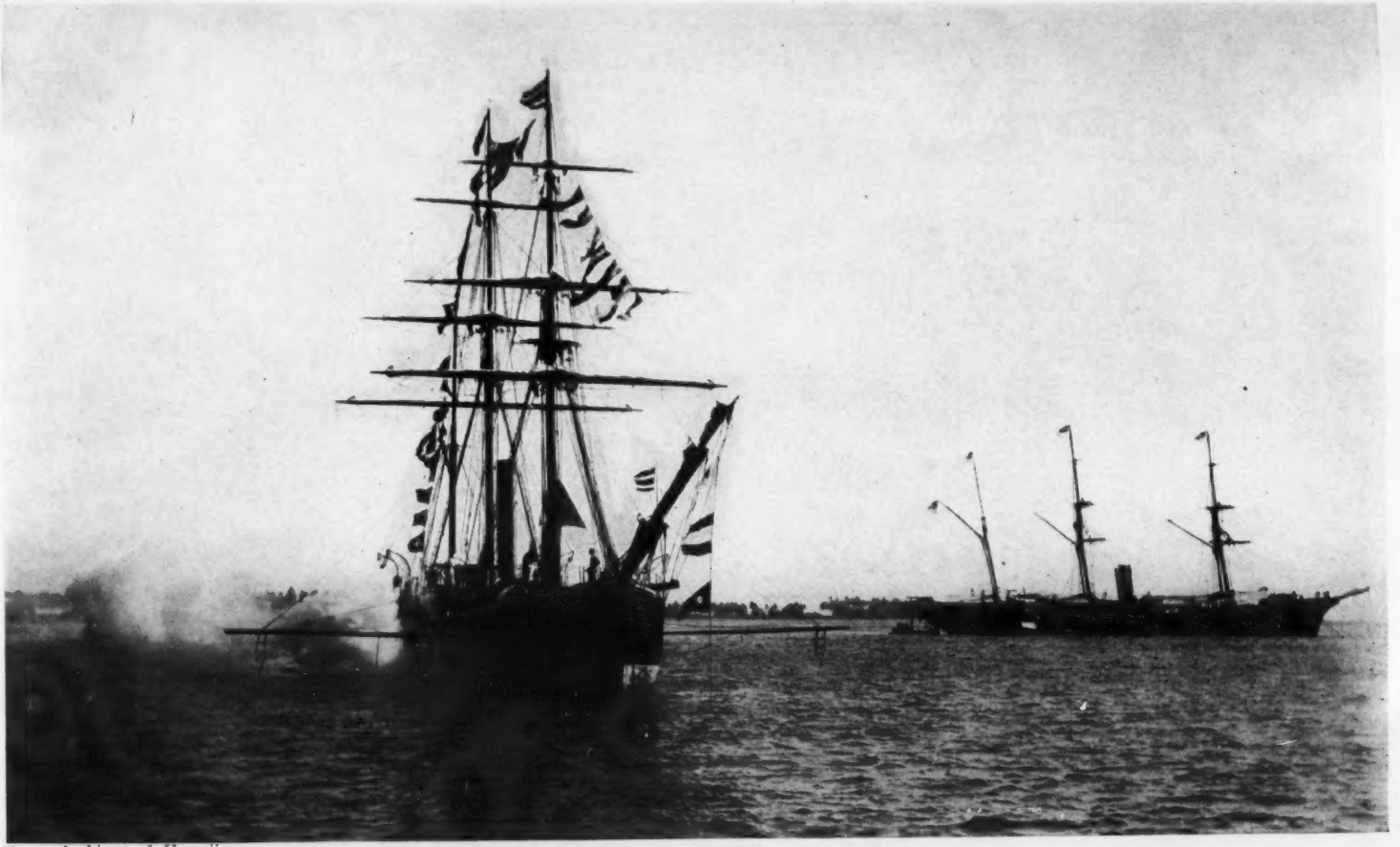
From Archives of Hawaii

MIDSHIPMAN (LORD) CHARLES BERESFORD REPLACING THE SHIELD TAKEN FROM THE OFFICE OF THE AMERICAN MINISTER (SEE PAGE 919).
From sketch made at time, 1865.



From Archives of Hawaii

REGATTA DAY IN NAVAL ROW—HONOLULU



From Archives of Hawaii

"KAIMILOA"—HAWAII'S ONLY WARSHIP, 1887

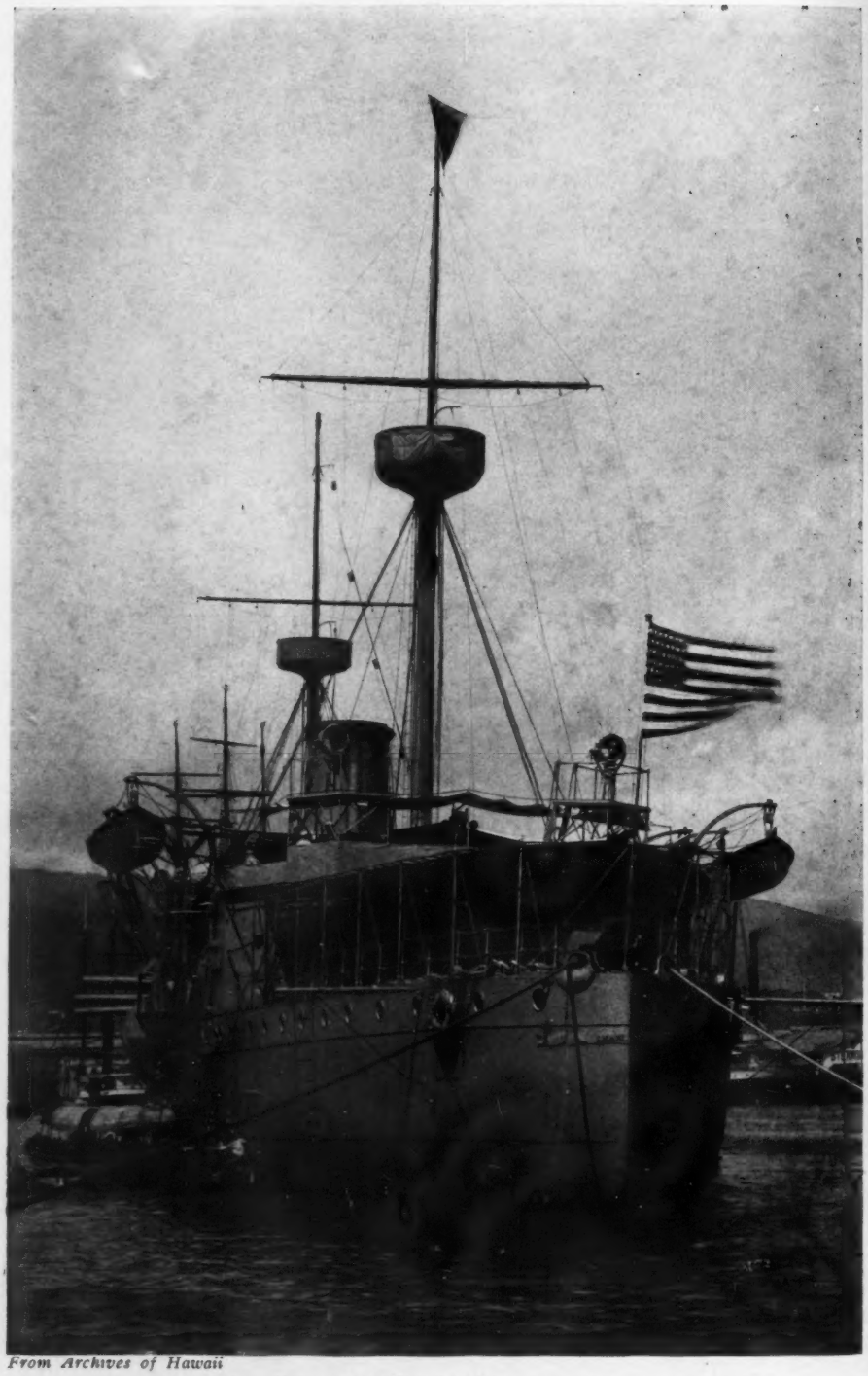
Firing a salute to Samoa where her diplomatic mission ended in failure. See PROCEEDINGS, September, 1926, page 1709.

From Archives of Hawaii

KAMEHAMEHA III (KAUIKEAOULI)
Friend of the American Navy which often befriended him. Born 1825—Died 1853.

From Archives of Hawaii

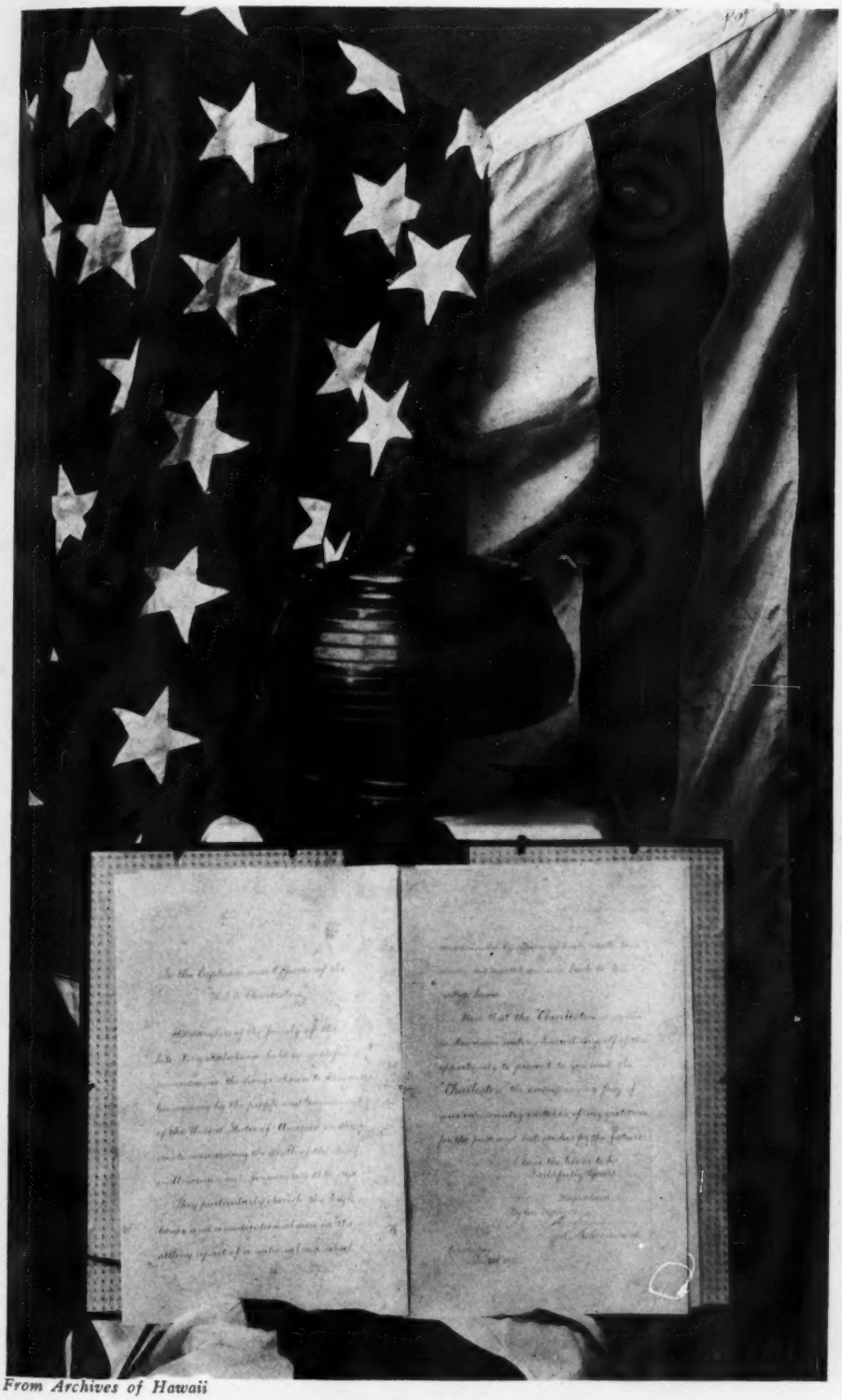
KING (DAVID) KALAKAUA, THE "MERRY MONARCH"—REIGNED 1874 TO 1891.
Born November 16, 1836—Died January 20, 1891.



From Archives of Hawaii

THE (OLD) U.S.S. "CHARLESTON"

In 1890 this ship took King Kalakaua to San Francisco as the guest of our nation. He went in quest of health, but died in the City of the Golden Gate, January 20, 1891. This same ship brought his body back to his native land. There being no cables in those days, the populace, eagerly awaiting his return and Honolulu in gala attire, did not know of his death until the ship rounded Diamond Head and witnessed the half-masted colors and cockbilled yards.



From Archives of Hawaii

AMERICAN FLAG AND HAWAIIAN CALABASH

Presented to the officers of the U.S.S. *Charleston*, June 3, 1898, by Queen Kapiolani.

From Archives of Hawaii

OLD GOVERNMENT BUILDING (WITH CLOCK TOWER)

The provisional government was proclaimed here on January 17, 1893, and on a flagpole in the grounds the crew of the U.S.S. *Boston* hoisted the American flag at the time of the annexation, over five years later, August 12, 1898.

From Archives of Hawaii

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From Archives of Hawaii

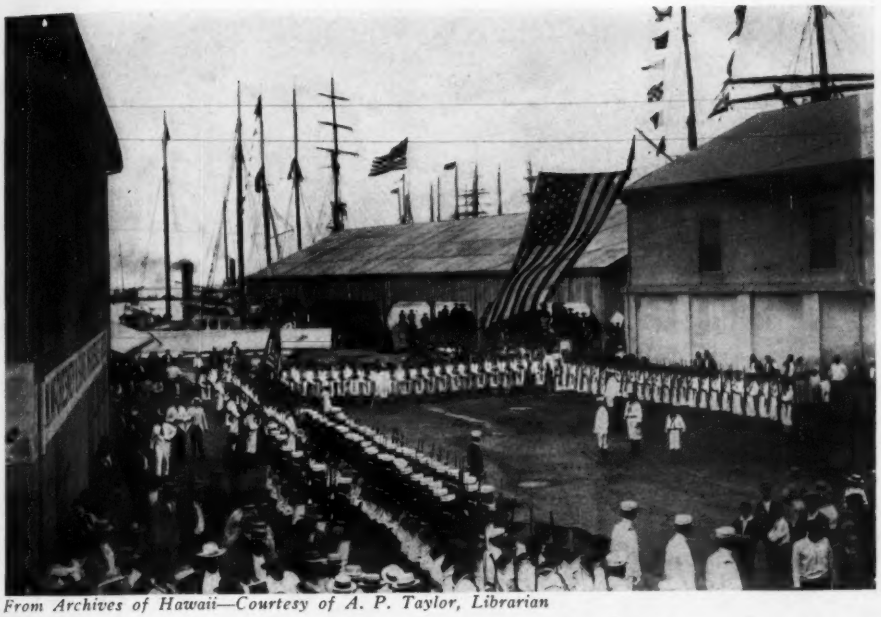
UNITED STATES GUARD FROM THE U.S.S. "BOSTON"

This detachment was on duty at the Arlington Hotel, Honolulu, at the time of the overthrow of the monarchy, January, 1893. Lieutenant Lucien Young, U. S. Navy, in command.

From Archives of Hawaii

PRESIDENT S. B. DOLE, OF THE REPUBLIC OF HAWAII, AND OFFICERS OF THE UNITED STATES MEN-OF-WAR WATCHING A PARADE NEAR THE OLD PALACE
President Dole, in white, with straw hat and beard.

President S. B. Dole, of the Republic of Hawaii, and officers of the United States men-of-war watching a parade near the old palace
President Dole, in white, with straw hat and beard.

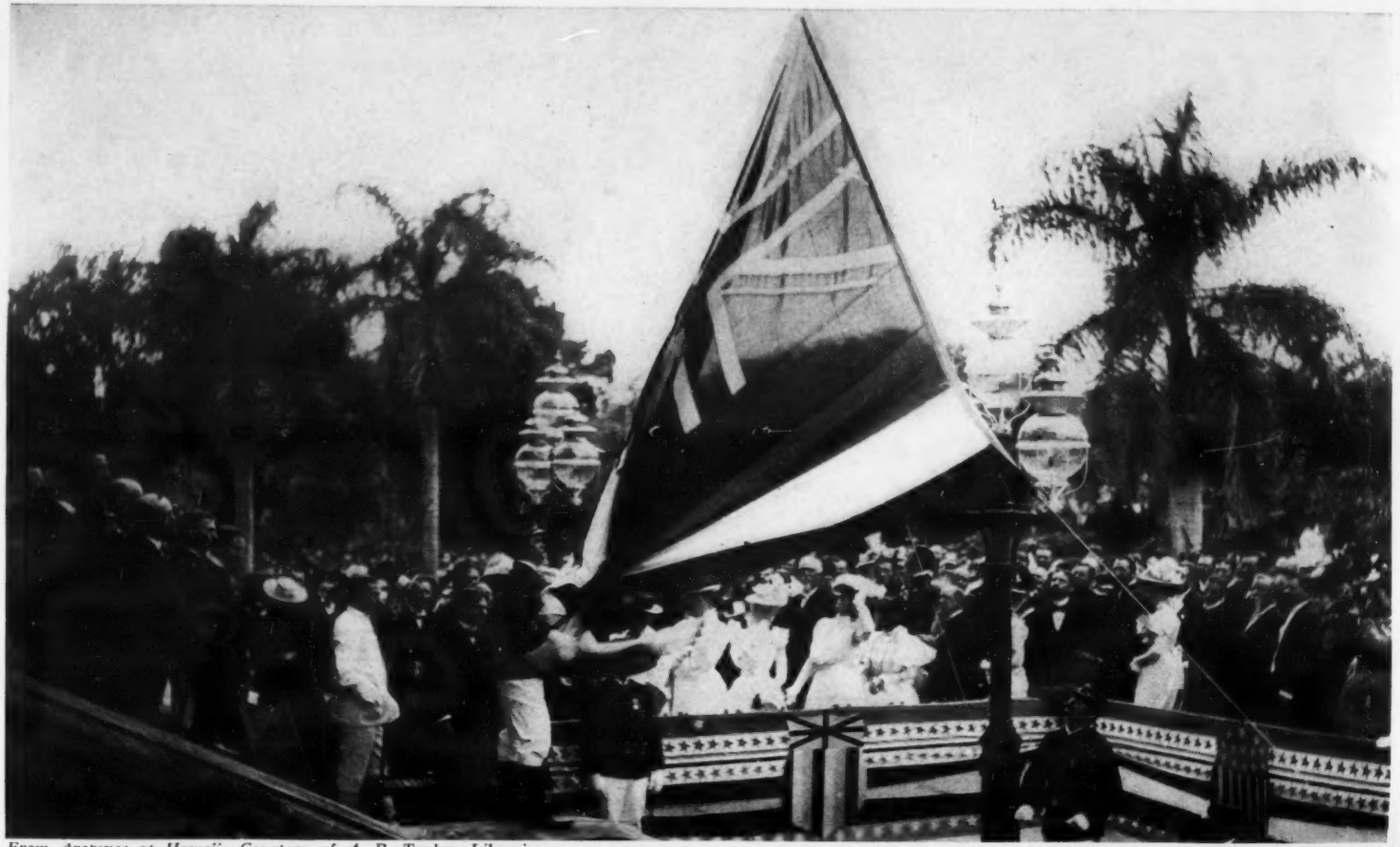


From Archives of Hawaii—Courtesy of A. P. Taylor, Librarian

Landing of American Detachments from Men-of-War to Attend Ceremony of Transfer of Sovereignty of Hawaii to the United States at Iolani Palace.

Courtesy of Tai Sing Loo, Honolulu

Interior of the Iolani Palace, Throne Room



From Archives of Hawaii—Courtesy of A. P. Taylor, Librarian

TRANSFER OF SOVEREIGNTY

The official lowering of the Hawaiian flag from the flagstaff over old Iolani Palace August 12, 1898, following the reading of the Proclamation of Annexation. The American flag has just been hoisted. The Hawaiian flag is now in the Naval Academy Museum.

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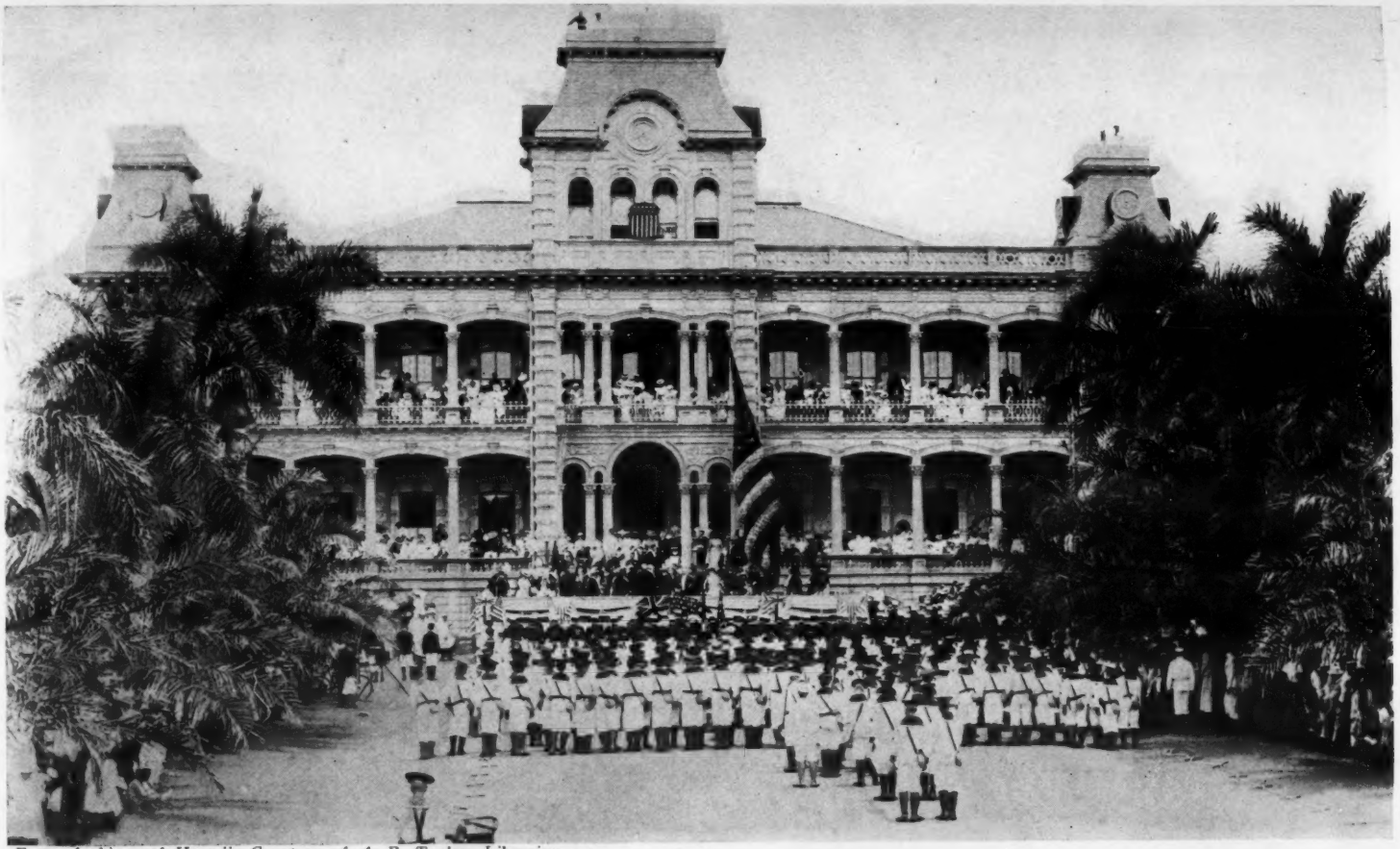
The official lowering of the Hawaiian flag from the flagstaff over old Iolani Palace August 12, 1898, following the reading of the Proclamation of Annexation. The American flag has just been hoisted. The Hawaiian flag is now in the Naval Academy Museum.



From Archives of Hawaii—Courtesy of A. P. Taylor, Librarian

ANNEXATION DAY AT HONOLULU

United States sailors hoisting "Old Glory" in the grounds of the old Government Building, August 12, 1898. (See Secretary's Notes.)

Courtesy of Rear Admiral Hugh Rodman, U.S.N.

THE SACRED CALABASH

The row of holes on the calabash are not distinguishable in this photo. The gold bands were placed on it by King Kalakaua's orders, purely for ornament. (See page 871.)

Courtesy of Tai Sing Loo, Honolulu

SCENIC COAST OF KEANAE, MAUI

DISCUSSION

Line of Position

(See page 574, May, 1927, PROCEEDINGS)

E. B. COLLINS, NAUTICAL EXPERT, HYDROGRAPHIC OFFICE.—Lieutenant Commander Weems, in his most interesting and able article, has acquainted many with a somewhat different method and means of fast position finding, one worthy of the thoughtful consideration of all progressive navigators. The process involves the solution of the astronomical triangle for altitude and azimuth. This necessitates the adoption of the St. Hilaire form, no doubt the most popular one among seafaring men, because of the same solution for all cases and applicable to every condition of the celestial body without limitation. Here we have a choice either by logarithms, or the inspection and interpolation methods of Aquino, Ball, Davis, British Sine Method Tables and others. These books are in most cases bulky or offer certain other disadvantages. Lieutenant Commander Weems submits a table of probably the fewest possible pages, in which the declination of every celestial body in the firmament may be utilized. This table is not only accurate in theory, but the process of application is made with minimum mental effort and slight chance of committing bungling errors. He has given an excellent original explanation of the theory upon which it is constructed, but it might be mentioned here in passing that as long ago as the year 1850 William Chauvenet, the first professor of navigation and mathematics at the Naval Academy, pointed out a formula, in the general case, for the derivation of values obtained in these tables. The result of his teaching of this particular process seems to have fallen in non-productive channels in this country for practical application in the form of a table was not accomplished until a few years ago by Ogura of Japan. In his *Astronomy,* Page 32, and the same principle in his *Spherical Trigonometry,* Page 218, after deriving this general equation of the astronomical triangle

$$\text{Sin h} = \text{sin d sin L} + \text{cos d cos L cos t}$$

and adopting this to logarithmic form by letting

$$M \sin K = \sin L, \text{ or } M = \sin L \operatorname{cosec} K.$$
$$M \cos K = \cos L \cos t, \text{ or } M = \cos L \cos t \sec K.$$

$$\text{dividing: } \frac{M \sin K}{M \cos K} = \frac{\sin L}{\cos L \cos t}$$

there is obtained $\tan K = \tan L \sec t$.
Substituting in the general equation
$\text{Sin h} = \text{sin d } M \sin K + \text{cos d } M \cos K$,
we obtain $\sin h = M \cos (d\text{-}K)$
or as used in these tables the reciprocal becomes

$$\frac{I}{\text{Sin h}} = \frac{I}{M \cos (d\text{-}K)}$$

or

$$\operatorname{cosec} h = \frac{I}{M} \sec (d\text{-}K)$$

It has been a real pleasure for me to work many sights with the aid of this small table, not only of observations near the meridian but under all conditions. I believe this compact, comprehensive edition will prove a helpful aid in the solution of all sights with simplicity and speed.

Why This Chaos in China?

(See page 421, April, 1927, PROCEEDINGS)

CAPTAIN H. P. PERRILL, U. S. N.—In Captain Hutchins' article, "Why this Chaos in China?" the members of the Institute have a most informing exposition of the present situation, backed by knowledge gained by a very extensive experience in

THE SACRED CALABASH
The row of holes on the calabash are not distinguishable in this photo. The gold bands were placed on it by King Kalakaua's orders, purely for ornament. (See page 871.)
Courtesy of Rear Admiral Hugh Rodman, U.S.N.

SCENIC COAST OF KEANAE, MAUI

that troubled land. While my own opportunity for gaining first-hand information on the subject is neither so extensive nor so recent, I think that it is substantial enough to justify my disagreement with certain assertions made by Captain Hutchins, and, for the sake of clarifying the understanding of readers who must depend upon such articles for their knowledge of the subject, to present such disagreement to the Institute.

On Page 422, Captain Hutchins says: "At the very outset, one significant characteristic of the Chinese character must be understood and accepted as correct; namely, that the only situation which commands respect from a Chinese is one that is controlled by force. A Chinaman respects force—nothing else; similar to the child that behaves in preference to punishment for his misdeeds." This characteristic is by no means unique to the Chinese. History is filled with instances in which other peoples have recognized force as such and yielded to it; British, French, German, yea, even Americans, have yielded to a display of force and occasionally under circumstances that reflect no credit to themselves. Nor should it be accepted as true that the exercise of force is the only situation that Chinese will respect. There are too many instances arising from individual contacts of foreigners with Chinese to justify the elimination of the probability that kindliness and fair dealing will carry just as much persuasion with the Chinese as they are known to do with any other human beings.

It must be remembered that the present chaos in China is the work of mobs, made up of individuals who have been aroused to an insane frenzy by the play of agitators upon their feelings. Reason has no more to do with it than it has in the formation of any other mob. The factors made use of by the agitators in arousing the passion of these mobs are innumerable, but the use of force in the past by foreigners in their dealings with the Chinese is one cause that is far from negligible. Of course, it requires force to handle a mob, but that is true, no more and no less, of a Chinese mob in Hankow or Shanghai, than of a lynching mob in Georgia.

To me, the most remarkable aspect of the present chaos in China is that the Chinese (even in mobs) have mustered up sufficient courage to wreak the damage and slaughter they have done. For we all know that courage is one quality the Chinese do not have. That is the main reason why heretofore the foreigners have made use of force with impunity. Of course, they do not like what the Chinese are now doing. Whenever did any bully enjoy a dose of his own medicine?

On Page 424, Captain Hutchins says: "The Christian general, whose troops loot and maltreat the natives to the hymn of 'Onward Christian Soldiers' (taught them by American missionaries), is at present in Northwestern China. . . . ."

I very seriously doubt whether many of General Feng's soldiers have come directly in contact with missionaries. There are so many Chinese in comparison with the number of missionaries that the chances are very great that most of the Chinese soldiers learned "Onward Christian Soldiers" from other Chinese. It is commonly reported that General Feng imposes a sort of religious service as a part of his military discipline. The measure of "Onward Christian Soldiers" is such that it lends itself very well to the rhythm of a setting-up drill.

It is not an unfair charge against the quoted language to say that it implies that American missionaries have taught Feng's soldiers to loot and maltreat the natives. But this is an interpretation so abhorrent that I am sure Captain Hutchins did not mean that and would not have his readers believe it.

The insinuations carried in the quoted paragraph are on all fours with a type of thinly veiled criticisms frequently made against missionaries as a class by naval officers, criticisms which, in my opinion, have no reasonable justification. They are largely based on ignorance and prejudice, and, like most things so based, untrue. What these critics fail to recognize is that the missionaries who are in China are there in pursuit of an ideal, an ideal which, applied elsewhere in the world, has wrought an infinite amount of good to mankind generally, despite the fact that most of mankind will turn their backs upon the teachings of that ideal, whenever it suits their selfish purposes so to act. Most missionaries in China are pursuing the teachings of that ideal with a degree of courage and sincerity that fully merits the approval of all fairminded men. That they live differently from and better than the people among whom they work is wholly beside the point.

There are plenty of missionaries in China who live just as the Chinese do, but no one can claim that it adds to their efficiency in their chosen endeavors, other than that it makes them less conspicuous as targets for native antipathy. When a missionary lives in the same manner as his own people, he is doing nothing at all discreditable. No missionary is in the business for money, for if that is what he wants he very speedily gives up the missionary calling and enters business. Of course, it is true that there are misfits among missionaries, but I doubt if the proportion is very much greater than in the Navy.

What the average naval officer does not realize is the measure of support given by our own fellow citizens to the missionaries in China (and elsewhere). The money so expended is voluntarily given in small sums by vast multitudes of citizens of our land from one coast to the other. The number of donors is not limited to our church membership by any means. The important thing to remember is that all these donations furnish a motive that creates a very lively interest in the work of the missionaries and in the people among whom they work. So vast is this body of donors that it constitutes a source of public opinion, almost unanimous in its beliefs, so vast that no administration would dare ignore it in its decisions. To this body of public opinion the doctrine of force is not and never will be acceptable.

The other side of the picture might be interesting to naval officers. What do missionaries think of officers and men in the Navy? There was, when I had a chance to find out, a very common belief that we were a lot of ungodly loafers, given to profanity, obscenity, intemperance and licentiousness. They looked upon us with misgiving and distrust, and wished to have nothing to do with us. The picture is not pleasant to look upon. But it is no more true than the converse, and, like it, based equally upon ignorance and prejudice.

When I succeeded in breaking down their reserve and really got acquainted with them, I found the missionaries a most interesting body of people, fairly liberal minded, for the most part well trained for the work, industriously and sincerely engaged in bringing to a benighted people what they believed would be most helpful and useful to those people. And this work, though rarely carrying with it physical deprivations, was being pursued in the midst of an isolation that involved spiritual and mental hardship to a degree that we in the Navy cannot conceive. I shall never forget the homesick bride I visited in Ichang. A visit from the Angel Gabriel could not have given her greater pleasure than the hour we sat in her house and conversed in English!

There is one serious charge that can be laid against the work of the missionaries. They have been partially instrumental in bringing to the Chinese some slight realization of the unbelievable hardships which fairly submerge most Chinese in eking out their miserable existence, and to that extent have aroused discontent with their lot. That discontent is now expressing itself in part in the present chaos in China. How heinous the sin of the missionary in this result is a measure that I must leave to the reader.

The Institute will be well advised if it can find means of publishing the lecture delivered at the Naval War College on November 26, 1926, by Mr. Henry Kittridge Norton, on "China as an International Problem." That will give to the readers of the PROCEEDINGS another view of the chaos in China quite as illuminating as Captain Hutchins' article. The lecture is worthy of far wider distribution than it has so far received. (Since this was written, a book on China, by Mr. Norton, has been published.)

Concerning the "Hall Effect" Principle as applied to Radio by Dr. Craig

(See page 482, April, 1927, PROCEEDINGS)

LIEUTENANT HARRY F. BRECKEL, U.S. N.R.—In the interest of the service the writer wishes to offer the below mentioned comment on the practical value of the Hall Effect Theory as applied to rectification and radio usage by Dr. Palmer H. Craig who conceived the modern application of a long discarded principle. Not wishing to deprecate in any way the work of Dr. Craig in applying the principle to modern radio uses, nor wishing to discourage those working on it in the future, yet the writer wishes to state that experiments conducted do not bear out the claims as regards the displacement of vacuum tubes by the device nor the elimination of the usual current supply devices for the modern radio receptor.

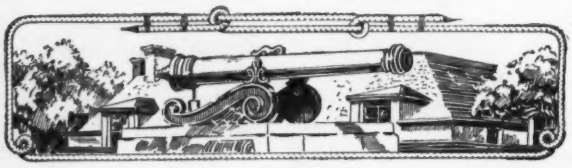
In his capacity as consultant in the com-

mercial field of radio, the writer had occasion to thoroughly investigate the merits of the device and the claims of Dr. Craig in his own laboratory at Macon, Georgia, and also in the laboratory of a large commercial concern, the experiments being under supervision of the inventor, and being conducted with a view of purchase of the rights under his pending patents, if the device proved of merit.

The experiments conducted decisively proved that, insofar as the present conception of the device utilizing the Hall Effect Principle was concerned, the apparent rectifying effect produced in connection with an alternating current was that brought about by purely thermal junction effects caused by lead and copper being in contact with the bismuth films, and which when heated slightly by the current flowing through them had the effect of producing a uni-directional transverse current. This current, however, was very small, being of the order of a few millivolts, efficiency of the device being very low when output was checked against input. The effect was not true Hall Effect, in which application, the currents and voltages are of very small values, in fact to quote a professor of physics of a certain university, "the limitations of the Hall Effect Theory as applied practically make virtually impossible the obtaining of any currents of sufficient amplitude to be of any value."

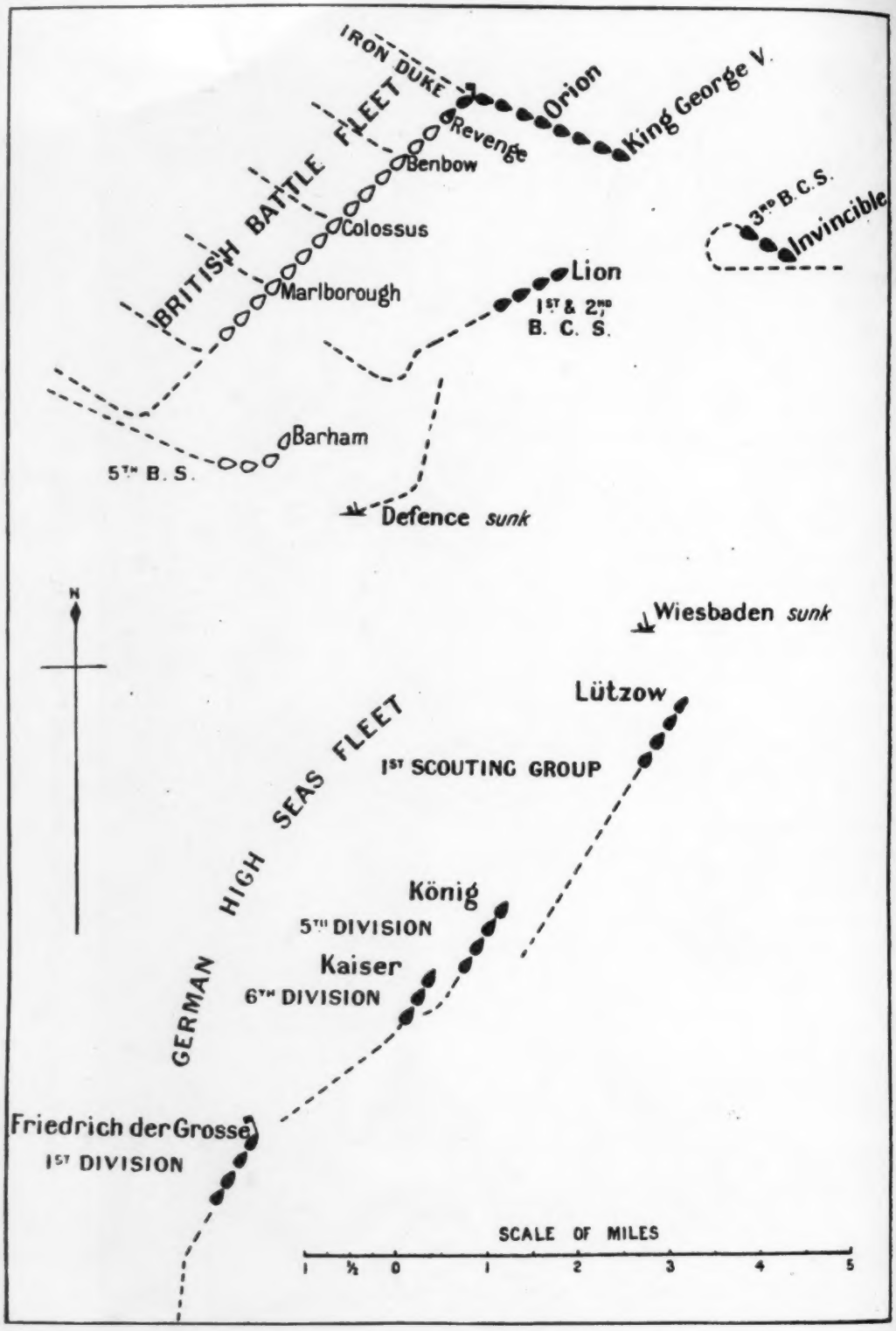
It was further found that the current and voltage values obtained during the conducting of the experiments were also largely due to inductive effects due to wires leading to the meters being in the strong magnetic field in which the bismuth plates were placed to secure the "Hall Effect" action. It was found that the meters themselves were influenced by close proximity to the field. These current readings could be obtained without the use of the bismuth plates, but when the meters were removed to a distance which precluded their being acted on inductively, the readings fell to absolute zero. Thus this definitely disproved the claim to rectification by the device. Insofar as the application to radio reception was concerned, the results were zero, it being considered that such effects as were obtained were due purely to capacity effects, the plates as assembled being nothing more than a condenser and "feeding through" the initial antenna current through this action to the ordinary vacuum tubes of the receiver. It is significant that the device was never utilized alone, but was always used in connection with vacuum tubes of conventional design which really did the work.

By and large therefore, the Hall Effect Theory as applied practically to radio usage is considered to be entirely without merit at this time, although, of course, it may be that the far distant future may see it made useful in this direction. The inventor is still working hard on the device with the usual optimism and persistency of the researcher, and it is sincerely hoped that Dr. Craig, who is a good friend of the writer, will ultimately achieve a very much deserved success, although as mentioned, the practical merits of the Hall Effect Principle would seem to place an insurmountable barrier in his path.



Courtesy of The Haskelite Manufacturing Corporation.

EXTERIOR VIEW OF AIRPLANE BUILT WITH HASKELITE BY KEYSTONE AIRPLANE COMPANY, BRISTOL, PENNSYLVANIA



THE BATTLE OF JUTLAND, 31ST MAY, 1916. 6:21 P.M.
The diagram shows the position of the rival fleets as H.M.S. "Iron Duke" opened fire.

PROFESSIONAL NOTES

1 JUNE TO 1 JULY

COMPILED BY
LIEUTENANT COMMANDER W. G. GREENMAN, U. S. NAVY
AND
ASSISTANT PROFESSOR HENRY BLUESTONE, U. S. NAVAL ACADEMY

THE LESSONS OF JUTLAND 878

FRANCE
The Rôle of Aviation in Case of War 886

JAPAN
Secret of Japanese Efficiency 887

ITALY
Naval Notes 888

GERMANY
Subsidies to Naval Constructors 888
Replacement of Ships 888

AVIATION
Aviation Signaling and Safety 889

CURRENT BOOKS AND ARTICLES 892

The Lessons of Jutland

By REAR ADMIRAL J. E. T. HARPER, C.B., M.V.O.

[EDITOR'S NOTE: Due to the importance and timeliness of the article, "The Lessons of Jutland," the usual notes on the United States and Great Britain have been omitted from this issue to make space for the publication of this article.]

The Journal of the Royal United Service Institution, May, 1927.—The student of naval warfare is far more concerned with reading aright the lessons of the Battle of Jutland than with wrangling over what should or should not have been done on that occasion. Some of these lessons are connected with technical and tactical matters which are rightly regarded as confidential, but others are of general interest and deserve wider publicity and discussion than they have hitherto received.

For convenience, they may be dealt with under the following headings:

(1) The importance of battle;
(2) The system of command in battle and opportunities for independent action;
(3) Comparison of the types of ships at Jutland and at the present day; and the effect of developments in ship construction on tactics;
(4) Effect of a reduced battle-line (owing to the Washington Agreement) on tactics;
(5) The proper use of light craft by day and by night;
(6) Staff work before, during and after a fleet action; communications and intelligence.

1. THE IMPORTANCE OF BATTLE

Those who argue that the Navy's primary object in war should be the destruction of the enemy's fleet are wont to exaggerate the importance of battle because they have confused the *object* with the *objective*.

The main *object* of the Navy in war is to secure our sea-borne transport and to deny free passage to that of the enemy. When this object has been attained it can truly be said that we have "command of the sea," a phrase which, incidentally, is meaningless except in war. A first essential to the attainment of this object is that our main fleet should defeat or contain that of the enemy, but this, alone, will not make the seas safe for our shipping. Even if the enemy's main fleet were completely annihilated, it would still be necessary to police the sea routes.

Throughout the late war the Grand Fleet successfully contained the German High Sea Fleet and thereby materially assisted the Navy as a whole in achieving its object—the safety of our sea communications. It is true that sorties were made by the enemy but on no occasion was his main fleet able to keep at sea long enough to inflict any serious damage on our shipping. In fact, the High Sea Fleet was more successfully "contained" than was the French Fleet at Toulon when watched by Nelson. It should be noted that the French fleet was not "blockaded," nor was the High Sea Fleet. In both cases the object of the British fleet was to bring the enemy to action if he put to sea and not to blockade him in harbor.

Opportunity to force a weaker enemy fleet to sea, and to bring it to action under conditions which will admit of defeating it completely, seldom rests with the superior one. An annihilating victory was denied the British Fleet at Jutland, because the situation was ruled by the weather. To press forward into battle regardless of conditions is the negation of sound strategy. The wise commander with time on his side seeks by tactical maneuver to improve the conditions under which he engages. If, however, they continue such as to neutralize any advantage he may have in numbers or as to make the issue purely a matter of chance, he will refuse to be drawn into battle through fear of any odium which may attach to him afterwards. A commander who rushes recklessly into battle, at a time when his defeat would mean disaster to his country's cause and when victory would have a dubious effect on the main issues at stake, is one who loses sight of his *object*.

Battle should be regarded as a means to an end, not a haphazard opportunity for "having a go" at an adversary in the hope of an ephemeral material victory which will receive popular acclamation. The tangible

results of a material victory would, of course, appeal to the popular mind, while the psychological effects on both victor and vanquished cannot be ignored. On the other hand, what is termed a moral victory may, none the less, lead to the attainment of the main object. Victory does not always go to him who does most material damage, but it does go to him who makes his opponent feel defeat to the extent of not wishing again to try conclusions in battle.

Battle, in short, should be a business dictated by sound strategy and not a "stunt," committed on heroic impulse. It was this policy which governed the conduct of the main action in Jutland and the first lesson to be learned from that battle is that, although such a policy may not lead to a dramatic triumph at the moment, it goes far to insure that the war will be won in the end and not lost in an afternoon.

2. The System of Command in Battle and Opportunities for Independent Action

It has often been alleged that the system of command at Jutland was unduly rigid and centralized, that control was centered entirely in the Fleet Flagship, and that initiative was denied to commanders of squadrons and flotillas. Apart from the fact that this is not correct, such criticism ignores the necessity for coördinating the movements of the squadrons and units of a big fleet, especially under the conditions of low visibility which so frequently prevail in the North Sea. The degree of decentralization and freedom to take independent action accorded to subordinate commanders are, however, matters open to discussion.

Some degree of independence must, of course, be permitted at all times, but it will have to be more restricted in low visibility than it need be in clear weather. By way of comparison it may be noted that the tactics of the High Sea Fleet at Jutland indicate that control was very rigidly centered in the German Fleet Flagship. This may be generally desirable in the case of the weaker fleet; at any rate, it appears certain that the avoiding tactics so efficiently carried out by the enemy battle fleet on that occasion would not have been so successful if the system of command had not been centralized.

In dealing with the system of command it is desirable at the outset to consider what is the most suitable position in the fleet for the commander-in-chief to occupy in order to exercise that command. It has been advocated that the commander-in-chief should not be in the line of battle, but that he should be in a fast vessel capable of rushing him to any point of the battle on the same principle that the headquarters of an army should not be in the trenches but in a selected position behind the lines.

Whatever the arguments in favor of the commander-in-chief being away from the battle line, they carry less weight as battle fleets become smaller and fleets become more mobile. If the commander-in-chief is not to be in the battle line there would seem to be only one other alternative—that is, that he should be in the air. This is perhaps a forecast of the future, and cannot be seriously considered until aircraft become more reliable and less vulnerable than they are now. As always, too, the weather conditions must be borne in mind.

At Jutland it is possible that the commander-in-chief would have had a far better idea of the situation if, instead of being dependent on reports from his cruisers and his own limited range of visibility, he had been in the air; but it is quite certain that the difficulties in communication and staff work involved would have made it quite impracticable for him to have conducted the battle from an airplane at that time. The conclusion to be drawn seems to be that in future a thoroughly trustworthy staff officer—possible the Chief of Staff himself—should be in the air, but that, for the present, the commander-in-chief should remain in the battle line.

Incidentally it seems not improbable that we shall see a parallel to this in the new army. The reduction of the infantry arm and development of tanks and aircraft point to greatly increased mobility in land warfare. The result may be that headquarters can no longer remain stationary. The general directing the tactics of an army in battle may, it is suggested, find himself in a tank or an airplane.

In studying Jutland with a view to determining the degree of freedom to be accorded to subordinate commands, it is necessary to bear in mind that in the battle fleet, the four *Queen Elizabeths* alone had marked superiority in speed. The rest had a maximum speed in company of about twenty knots.

Furthermore, it may be taken for granted that, unless the speed of one of the rival battle fleets has been reduced by damage, a fleet action will usually be fought at something approaching full speed, for the commanders on each side will be straining to improve their tactical position, or one will be endeavoring to escape and the other to head him off. Clearly, therefore, the principle that it is unsound to detach any part of the fleet which has not sufficient margin of speed to rejoin the main body, applies just as much today as it did then.

This does not preclude limited maneuvering by divisions with the object of improving gun-fire or avoiding torpedoes, but such maneuvers must not embarrass the commander-in-chief by throwing out the handling of the battle fleet as a whole. At Jutland the *Queen Elizabeths* with a squadron speed of about twenty-four knots and the battle cruisers with one of twenty-five to twenty-seven knots were in a different category. These commands could safely select their own range and were in no danger of being isolated by a superior enemy force; they were well placed at each end of our battle line for independent action on the van or rear of the enemy. In practice the battle cruisers had more opportunity for exercising their freedom than the Fifth Battle Squadron because action with the enemy battle fleet was joined on each occasion on a converging course, which gave our battle cruisers, at the head of the line, a better chance to encircle the enemy, while the rear of each of the opposing battle fleets was more widely separated from that of their opponents. Had the Fifth Battle Squadron pushed forward to the head of the line it would have blanketed the fire of the other battleships and the commander-in-chief would not have been as well prepared for fighting on an opposite course as he was through having a fast, strong division at *each* end of his battle line. This is an ideal disposition as it affords opportunity for bringing pressure to bear on the extremities of the enemy's line no matter in which direction the battle is fought. As things turned out at Jutland, it is probable that there would have been more scope for this fast battle squadron if, during the main action, it had been in company with the battle cruisers at the head of the line, but the special conditions could not be foreseen.

In the near future our combined battle fleets will consist of:

	Maximum designed speed, in knots	*Maximum squadron speed, in knots*
2 *Nelsons*	23	20
5 *Royal Sovereigns*	23	
4 *Iron Dukes*	21	
5 *Queen Elizabeths*	25	24

and our battle cruiser force today is:

1 *Hood*	31	29
2 *Renowns*	31.5	
1 *Tiger*	30	

Except that the number of ships in the battle fleet will be much less than at Jutland, the composition of the main fleet as regards fast divisions is not dissimilar and, in a broad sense, the experience of that battle should hold good. The *Queen Elizabeths* and battle cruisers will doubtless be able to exercise considerable freedom of movement, particularly if visibility is good, but, even so, fast squadrons must conform to the commander-in-chief's general tactical intentions, and in low visibility, or at night, it is vital that they should not lose touch so completely as to risk falling out of a main action or of suddenly running foul of, or blanketing, their consorts.

Cruisers have their own special rôle, and must at all times be given very considerable latitude, as they were at Jutland, to enable them to fulfil it most efficiently.

3. Comparison of the Types of Ships at Jutland and at the Present Day, and the Effect of Developments in Construction on Tactics

It is an accepted axiom that the power of an enemy should never be underrated and that nothing should be left to chance. Most commanders therefore will be disposed to assemble all available force preparatory to going into action, but Jutland produces examples of the undesirability of including in a fleet ships of an unsuitable type. Numbers may easily be added, but the fleet may thereby be weakened in fighting power; moreover, a multiplicity of types of ships is likely to prove embarrassing.

Battleships.—Our battle fleet today is not very homogeneous; we have the two *Nelsons* and five *Royal Sovereigns*, with a designed speed of twenty-three knots, and the

four *Iron Dukes* with one of twenty-one knots. The greatest difference is, however, in regard to the gun range and the vulnerability of the ships, more especially to under-water attacks. The difference between the guns of the *Iron Dukes* and the guns of the *Nelsons* is greater than that between those of the oldest and newest ships in the battle line at Jutland. The difference in speed is comparatively less marked.

The increased protection against under-water attack enables the most modern battleships to accept greater risks than would have been justifiable with the older ships. Whereas with battleships of pre-Jutland design it was very desirable to deploy into line of battle before reaching the extreme torpedo range of the capital ships of the enemy, with post-Jutland ships this is not so vitally important. The present day torpedoes have a longer effective range than those in use at Jutland, but owing to the greater range of the guns of the main armament it would still be possible and desirable, provided the weather is clear to establish hitting from the more modern ships while still outside effective torpedo range. This would, however, very possibly, result in having to dispense with the gunfire of the four *Iron Dukes* until the range is closed sufficiently for their older guns to become effective.

At present this disparity between the old and the new may not seem very marked but the time may come when the *Iron Dukes* will be in a similar position to that of the *Deutschland* class at Jutland, except that the deficiency in speed will not be so marked. Scheer did not originally intend to include the Second Squadron of pre-dreadnoughts in his operations, but at the urgent request of Admiral Mauve, who commanded that squadron, he decided to allow them to accompany the fleet. Their presence must have caused the German commander-in-chief anxiety throughout the action. They limited the speed of his fleet and were of practically no assistance to him. If matters had worked out somewhat differently to what they did, it is conceivable that the presence of the Second Squadron would have prevented Scheer reaching his protected waters before being brought to action after daylight.

Cruisers.—It was fortunate that naval opinion had realized to some extent, before the war, that a multiplicity of types of ships would prove to be a hindrance in battle. By the time Jutland was fought the old protected cruisers and scouts had been banished from the main fleet and were usefully employed on operations outside the North Sea. We still had, however, one type of ship—the armored cruiser—which proved quite useless as a unit of the main fleet. These ships did not figure in the actions of Heligoland and Dogger Bank, and if there had been a sufficiency of light cruisers they would not, presumably, have been attached to the Grand Fleet at Jutland. They had insufficient gunpower to be given a position in the battle line and insufficient speed to act with the battle cruisers. As part of an advanced screen to the battle fleet their lack of speed prevented them extending the distance rapidly when required to do so. Of the two squadrons of armored cruisers present one took no part in the action and the other was almost totally annihilated. As matters turned out it would have been better if they had remained in harbor. Their presence was an embarrassment rather than a help, and did little but swell the losses of ships and personnel.

This experience emphasizes the point that the mere adding to numbers by including vessels of unsuitable type is unsound.

There was an insufficiency of light cruisers at Jutland and it seems probable that there will be a similar shortage in future; but in this connection the lesson to be learned is that, if, during the approach, the fleet is divided, as the battle fleet and battle cruiser fleet were, it is better for the light cruisers to be allocated more equally. Our battle fleet gained nothing by having a screen of armored cruisers, but earlier visual contact would have been insured if another light cruiser squadron, instead of being attached to the battle cruiser fleet, had been acting as an advanced screen to the battle fleet.

At the present day we have, to all intents, only two classes of cruisers—the 10,000-ton and the quondam light cruiser. There is no reason to be afraid that in the heavy 10,000-ton cruiser we are repeating the mistake of the armored cruiser. The crux of the whole question is speed. In a fleet action the 10,000-ton cruisers will prove of considerable value as a strong support to the lighter cruisers in the advanced screen and the considerable margin of speed which they possess will enable them to support their consorts without delay.

The other important developments in ship construction which will affect future tactics

are submarines which will have sufficient speed and endurance to accompany the main fleet; the extra size of the destroyers which will enable them to maintain a higher speed in heavy weather; and the introduction of large and fast aircraft carriers.[1]

We can draw no lessons from Jutland in regard to the use of aircraft for reconnaissance purposes; but it seems unlikely that they will entirely take the place of the cruiser for this purpose, owing to the peculiar and uncertain limitations imposed by atmospheric conditions and the frailty of the aircraft themselves.

4. Effect of a Reduced Battle-line (owing to the Washington Agreement) on Tactics

At Jutland, when the main action had been joined, there were twenty-seven battleships in the British line, including the three *Queen Elizabeths*[2] and twenty-two in the German line. With ships closed up in station at two and a half cables interval, this meant that our battle line would have been approximately six miles long, while the German one was very little less. Actually very long lines like these are wont to get strung out somewhat and the distance from van to rear was probably often as much as seven miles. Today, however, the Washington Agreement has limited our line to a maximum of sixteen battleships, of which five are the fast *Queen Elizabeths;* the total length of this line with ships at two and half cables intervals, therefore is just under three and a half miles.

At present the command and organization of our battle squadrons is somewhat in a state of flux, but it would seem logical and appropriate that eventually the commander-in-chief should fly his flag in the *Nelson,* and that the fleet flagship and her sister ship, the *Rodney,* should take their place together in the battle line between the five *Royal Sovereigns* and four *Iron Dukes,* the *Queen Elizabeths* providing a fast squadron at one end and the battle cruisers at the other. The net result of this would be a fleet consisting of a comparatively short and compact main squadron of eleven battleships with powerful and highly mobile squadrons at its extremities.

At Jutland the great length of the line and the number of ships in it without any superiority of speed over that of the battle fleet as a whole, made it most difficult to develop the full gun-power of all the units, in fact, it was only during Jellicoe's L-shaped deployment and later, when Scheer tilted fair into the center of our battle line, that it was, even theoretically, possible for the whole weight of our battleships' fire to be developed; in practice limitations of visibility neutralized even these opportunities in varying degrees.

As has been remarked before, it is impracticable for sections of the battle fleet, which do not possess a reserve of speed, to engage in independent maneuvers, and it seems probable, therefore, that the *Nelsons, Royal Sovereigns* and *Iron Dukes* will, generally speaking, maneuver as one squadron. At Jutland, it was more than once found convenient to alter the course of the battle fleet by divisions or sub-divisions, because a simultaneous turn by all ships out of line ahead would have brought the fleet into a very long and awkward single quarter-line, making station-keeping difficult and, probably, leading to some disorder and masking of gun-fire. On the other hand, there is no doubt that the German battle fleet had drilled at simultaneous turns until it could perform them with great precision, although they only made use of such maneuvers to avoid action. It seems reasonable to assume that, under present day conditions, "turn together" will be the order, rather than "turn, leaders of divisions (or sub-divisions) together, the rest in succession."

This question of a reduced battle line can, of course, be discussed from many points of view. Broadly, its effect must be to make the battle fleet far more mobile; maneuvers to close the enemy, such as that signaled by Jellicoe while the fleet was still deploying, but which he had to cancel because it was impracticable, will present little or no difficulty; the bearing of ships in line can be changed comparatively rapidly, whereas, with the twenty-seven ships at Jutland it would have been a lengthy process; maneuvers to avoid torpedoes will be easier to perform; and the shorter battle line will present a smaller target for enemy torpedo craft "browning the covey," and less choice of target for individual attacks.

[1] An article on "Aircraft Carriers in a Fleet Action," by Lieutenant A. W. Clarke, R.N., appeared in the *Journal* for August, 1926.—EDITOR

[2] The *Queen Elizabeth* herself was not present at Jutland, and the *Warspite* fell out of the action while the battle fleet was deploying.

It is not inconceivable that an international agreement may be come to which will preclude the building, in peace-time, of warships, other than aircraft carriers, of more than 10,000 tons and carrying guns bigger than eight-inch. This would merely result in the 10,000-ton "cruiser" having to assume the rôle of battleship. It might also lead to a type of 10,000-ton ship where a certain amount of speed had been sacrificed in favor of more guns and more armor so that she could "lie in the line"; if this comes about we shall merely be reverting to the conditions of a main force of slower but more powerful ships with faster and lighter wing squadrons, although the individual units will be smaller. The fact that the guns may be only half the caliber of those of our latest battleships does not mean that battle will, necessarily, be joined or fought at less range, for the range of the modern eight-inch gun will be fully up to the opportunities afforded by visibility. In practice it is this latter which will continue to govern, to a very large extent, the tactics to be employed in battle. Spotting and the direction of gunfire, even the maneuvering of fleets themselves, may be conducted from the air, but aircraft, too, suffer from limitations imposed by weather and light; moreover, in spite of improvements to gunnery appliances, we are some way off attaining such perfection that a highly mobile enemy can be effectively engaged although none of his ships is visible. What is possible for static artillery on shore, bombarding fixed objectives, is a very different problem where both gun platform and target are moving at high speed.

5. Use of Light Craft

By Day.—In the light of the knowledge we gained after the action there can be little doubt that our light craft could have assumed a more offensive rôle than they did during the daylight phases at Jutland; but it is easy enough now to say that no submarines were present on either side, and therefore destroyers need not have been tied to the battleships and battle cruisers to act as a screen. At the time, submarines seemed a very real menace as is seen by the repeated reports from ships which imagined they had sighted them.

Whether the menace of underwater craft can be ignored altogether in future, must depend partly on the development of these vessels and their future capability to remain in company with the fleet, and largely on the locality in which an action is being fought. At the date of Jutland, submarines were quite incapable of keeping up with the fleet, but the fact that battle was joined within measurable distance of the enemy submarine bases, very naturally put everyone in our fleet on the alert. Broadly speaking, however, the lessons, not only of Jutland but of the late war generally, are that a mass of surface ships moving in company at high speed and in open waters have nothing much to fear from the submarine and the development of the devices for locating underwater craft at some distance will reduce the risk still more. Conditions in a fleet action are wholly different to those of ships on passage and in waters where a submarine may lie in wait for her opportunity. In a fleet action, unless an enemy succeeds in enticing our ships over a carefully prepared submarine trap, it will be most difficult for underwater craft to work their way into a position to attack and for this reason it would seem at first sight that in future it will be possible to release our destroyers for more active duties.

Unfortunately, a new danger has arisen in the shape of torpedo-carrying airplanes, and until the whole system of fleet anti-aircraft defense has been fully developed and tried out, this menace may call for a destroyer or light cruiser screen to reinforce the protective measures which the battleships can take for themselves.

Aircraft can, of course, attack from almost any bearing, whereas a submarine is, generally speaking, only dangerous on a forward bearing. This means that an anti-aircraft screen must be stationed almost the whole length of the battle line instead of in the form of flotillas grouped near the extremities.

Another call on the services of destroyers, and possibly of cruisers, too, will be for the protection of our own aircraft carriers. These great, highly vulnerable ships are tempting targets for enemy light craft and airplanes, especially as they will often have to maneuver at some distance from the battle fleet. It is clear, therefore, that although Jutland demonstrated the desirability for making the maximum use of our light craft for offensive purposes, new claims on their services in a defensive capacity have arisen and cannot be completely ignored.

By day there are three forms of offensive action open to destroyers:

(*a*) Against the enemy battle line;
(*b*) Against the enemy destroyers;
(*c*) Against the enemy aircraft carriers.

The first would seem more applicable to the tactics of the weaker fleet, whose object must always be to reduce the disparity in force by a process of attrition; moreover, destroyer attacks are certain to continue to play an important part in the tactics of an enemy desirous of avoiding action. On the other hand an ill-judged offensive by its own destroyers *en masse* may seriously interfere with gunfire and, for the time being, neutralize the advantages of the stronger fleet.

Counter action against enemy destroyers, on the principle that a vigorous offense is the best defense, is, of course, generally desirable and would doubtless have been carried into effect by our light craft at Jutland even more than it was, but for the seriousness with which the submarine menace was regarded.

The location of the enemy's aircraft carriers will be one of the primary duties of our reconnaissance aircraft. Once this has been done, they will become important objectives for attacks by our light craft and torpedo airplanes.

By Night.—It is not very generally realized that our light cruisers and destroyers during the night after Jutland did far more than simply trail tamely behind the battle fleet. It is not improbable that as things turned out, Admiral Jellicoe's decision to mass his light craft astern enabled them to inflict more damage on the enemy than they would have done had he launched them into the night to hunt for the High Sea Fleet. Certainly it minimized the chances, which in the latter alternative would have been considerable, of "regrettable incidents" with each other or with our own heavy ships.

During the hours of darkness, our light craft caused the enemy heavier losses than he sustained in the whole of the rest of the battle. These losses included one battleship, two light cruisers and two destroyers sunk by our torpedoes and a third light cruiser rammed and sunk by one of her own battleships while trying to escape and, probably, already mortally wounded. This was the price which Scheer paid for his "break through." It is possible that it might have been an even higher one had the enemy not made use of the British "challenge" for the night on at least one occasion, thereby disarming an attack, and had our light craft been given more specific instructions as to what duties they might be expected to be called upon to fulfill.

It is of great importance that commanding officers of even the smallest unit should be kept as much *au fait* with the situation as is practicable. This especially applies to officers such as those commanding a light cruiser squadron or a destroyer flotilla, who not only require to know the predetermined policy of High Command but, if they are really to be in a position to exercise initiative, they must, from time to time, be given an appreciation of the situation and be told what are the commander-in-chief's latest intentions.

Criticism has arisen because our destroyers were not given a more active part to play during the night of Jutland, but the history of that period of the battle emphasizes the difficulty of distinguishing friend from foe in the dark and the risk of allowing destroyers to separate from the main fleet to locate and attack an indefinite enemy. This particularly applies, when, as at Jutland, the commander-in-chief is bent on renewing the main action and requires his light forces to be in company at daylight for that purpose.

It is one thing to give destroyer leaders considerable freedom by day, when the opportunity to attack may be apparent to them, and quite another to allow them to prod about in the dark, making spasmodic attacks if they chance to meet the enemy, losing their bearings and getting more and more out of touch with each other and their own fleet. Incidentally, it may be noted that the German destroyers, equally, were not used specifically to search for and attack their enemy on the night of Jutland. They were kept in close touch with the battle fleet.

6. The Staff Work of a Fleet Action

(*a*) *At the Admiralty.*—In the days before wireless or even the line telegraph, the Board of Admiralty, or whatever authority was exercising supreme naval command in London, could do little more than direct the general disposition of fleets and squadrons leaving it to the experience and sagacity of the commanders of the forces afloat to do their best to further the Government's policy.

Under the conditions of the late war, the Admiralty was the center of intelligence and it was there that the earliest warnings were received of enemy movements. On the First Sea Lord, aided by the Naval Staff, therefore, fell the responsibility for actually ordering the sailing of our main forces whenever there appeared to be a chance of bringing the enemy to action.

Active coöperation by the Admiralty during a fleet action was a new thing until Jutland, and at that date there was less confidence, both at the Admiralty and afloat, in our system of intelligence than, in all probability, it deserved and certainly than there would be now. It was the work of the Naval Staff in London which detected enemy activity, caused the sailing of the Grand Fleet and eventually brought about Jutland. Unhappily, an interdepartmental misunderstanding resulted in commands afloat being given the impression that the German battle fleet had not left harbor up to the moment when it was actually sighted. This, naturally, caused a loss of confidence in subsequent Admiralty reports of enemy movements.

Again, the Admiralty had a clear indication, through an intercepted signal, that Scheer intended making for Horns Reef,[3] so much that it would have been justifiable for them to have sent a message to Admiral Jellicoe in such terms as "Have intercepted a signal from commander-in-chief of High Sea Fleet, calling for air reconnaissance in vicinity of Horns Reef at daylight. Unless you have other information of enemy's intentions, it would appear desirable you should steer a course to enable you to intercept enemy *en route* to that locality."

No communication of this nature was made and a vital piece of intelligence was withheld. This was a failure in staff work, but for which, action might have been rejoined next day. On the other hand, in the existing degree of development of the Naval Staff at the Admiralty and its relations with the High Command afloat, such a direct intrusion into the conduct of operations as this suggests might well have been resented. The lesson remains, however, that under modern conditions it has become of the highest importance to develop the shore intelligence organization, whether at the Admiralty or at an advanced naval base on the other side of the world, and to link it up with the command afloat in a way which will insure mutual confidence and service.

(*b*) *Afloat.*—Staff work afloat may be divided into:

- (*a*) Intelligence of and about the enemy;
- (*b*) Plotting enemy movements;
- (*c*) Information concerning own ships' movements, especially those detached;
- (*d*) Communications;
- (*e*) Recording.

In the Fleet Flagship, each of these duties requires a separate and distinct section of the staff to cope with it; in the case of lesser commands several will, of course, have to be combined or to a large extent eliminated. At Jutland there were certain failures in staff work, possibly due to the fact that the full requirements of a modern fleet action had not yet become apparent. It is impossible to read the *Official History*,[4] however, without being struck with the fact that in a number of cases the importance of conveying information of the enemy to the commander-in-chief was not sufficiently appreciated. In ships heavily engaged themselves, it is liable to be forgotten that such engagements may only be incidental to their primary duty, namely, that of keeping the Higher Command informed of what the enemy is doing so that the battle fleet may be brought into action. It is under such conditions as these that a small staff, or even a solitary individual, entirely detached from "ship duties," may be invaluable for collecting intelligence and making *certain* that it is transmitted.

At Jutland, the main defect from the first to last was the lack of intelligence reports although there was a stream of messages passing, many of which were of secondary or no importance. There is, of course, a danger of the Fleet Flagship being swamped by a super-abundance of reports, but her staff organization should provide for a system of "receiving or rejecting" to obviate congestion.

Communications although, seemingly, highly efficient in the battle fleet, proved defective on a number of occasions in other squadrons. In some cases alternative means to visual signaling were not used as a r[illegible] of course and regularly. At times the

[3] *Official History of the War.—Naval Operations.* Vol. III, p. 402.

[4] *Official History of the War.—Naval Operations,* Vol. III.

used, at others they were forgotten or delayed. This, of course, is purely a question of efficient organization in the signal department, but the lesson is that it is incumbent on a commander to insure that his intentions and orders *are* made known clearly, concisely and *promptly* to his command. Failure to do so can only be regarded as reflecting on himself and his staff.

Again, the experience of that battle showed that a commanding officer who has vital information about the enemy should regard communication of that information to the higher command as next only in importance to engaging the enemy. Cases occurred where ships nearer the enemy relied on their divisional flagships seeing what they could see; in other cases, a report was made but never reached its destination. These failures affected the whole subsequent course of events.

Finally, it cannot be emphasized too strongly that the "staff work" of a fleet action is not confined to a little knot of officers grouped round the commander-in-chief. An admiral's "staff" is primarily the captains of his ships and this should be continually impressed upon them in all peace training. The trained staff officer is a most valuable addition to modern naval personnel, but he should on no account be intruded between a flag officer and his captains. Moreover, commanding officers must not be so "staff ridden" that they lose those powers of initiative and resource which should inspire them to take unconventional action, such as that of a destroyer leaving her station and not being satisfied until she has communicated in some way with the commander-in-chief, or that of the captain of a battleship who does not hesitate to break silence and use his wireless or shaded flashing lamp at night to report sighting the enemy. In this respect the lessons of Jutland are the lessons of Trafalgar and of every great naval battle.

FRANCE

The Role of Aviation in Case of War

Les Sports, April 30.—In the *Ailes,* our contemporary colleague, Morvan, proceeds to an inquiry into the status of military aëronautics. He has consulted authorities on the subject; i.e., men who get along, military chiefs, political leaders and, of course, former ministers, on the rôle of aviation in case of a next "last war" in the near future.

It is to laugh, we must say; or it is sad. It all depends on the point of view. Not one of these gentlemen agrees with another: one insists on an independent air army; the other is absolutely opposed to it.

Our colleague, in his own statement which precedes that of his correspondent, says some excellent things. In the first place, he puts us on guard against the principle that obtains in "official" circles of applying to aviation the conception of the linear frontier of the land battle line, a frontier limited by natural obstacles or marked off by neutral territory.

It is a gross error, in fact, for which we may pay dearly. For us, it is difficult to conceive that men who are responsible for the destiny of the country should still fail to understand the decisive rôle developed by aviation in a conflict between two great powers. Must we again go through the sorrowful days that characterized the beginning in 1914 when, though it was everywhere known that the Germans would invade us through Belgium, all our forces were massed on the East!

Must we continue depending on a miracle to avoid disaster?

Maintaining his argument, Morvan says:

"The battle develops on three fields: one non-continuous front: the land front; two continuous fronts: the sea and the air. *It may last for years.*"

Farther on, after setting forth the preparations for battle, he says:

> The aërial war will develop in all its amplitude and violence; a complex struggle, with its infinite variety in form and means, directed evidently in harmony with the general objects aimed for by the army and the navy. It will be lost or won when the army has completed its concentration, harassed and wearied by the activity of airships. It will be won by the country which, regardless of doctrines, will have thrown its entire air force, absolutely all of it, in that *tragic conflict of a few days, a few hours perhaps.* It will be won when the Grand Quartier General has hardly been established and is busy arranging the movements of trains and convoys amidst the teeming swarm on land.

Years or several hours?

If there is no doubt that aviation will decide the destiny of arms, it is not to be forgotten that, in war, once the enemy's resistance is broken, the conquered territory must be occupied and organized.

The "crawlers" (infantry) resume their rôle and advance where the High Command wants to impose its will on the conquered.

There will therefore be a great aërial battle; but all flying machines will not be engaged in it; far from it.

In such an air battle, what shall we expect the bombardment planes to do? And the range finders? and the infantry liaison planes? Have themselves brought down?

Their rôle is not that of fighting; they are not built for that. You don't take a race horse to make a steeple chaser out of him. As Monsieur de La Palise would say: "Air fighting is the business of the battle planes—pursuit planes." All the pursuit units will be in the fray at the same time.

The first clash of the two enemy pursuit squadrons will be something fabulous and will really decide the result of the war. The victor, being master of the skies, will police them. It is then only that, under the protection of that police, the other aviation arms will be able to accomplish their task, which is constant coöperation with the land and naval forces. In their efforts to attain their objective, the army and the navy will then be powerfully aided by their specialized squadrons, and that more so because the enemy army and navy will not be able to use the same means, as their pursuit planes will no longer be there to protect their observation or fire control planes. The latter, pursued like hares, will be unable to carry out their task.

All air forces at the disposal of one chief? That may not be indispensable. It is necessary, however, that all the fighting forces be grouped under the command of one man who would be responsible to the commander-in-chief only. It is therefore of fundamental importance to develop and maintain our pursuit forces above all. To be sure, all branches of aviation require the vigilance of the chiefs directing them, but the number and speed of the other specialties are of secondary importance. There would be no use of having many fast spotting planes and infantry planes if they were unable to show themselves in the open. During the war, superiority of one side over the other in aviation was always decided by the quality of its pursuit planes.

We should have strong adaptable pursuit planes, superior in speed and in rising capacity, maintaining their maneuvering qualities at a height of 6,000 meters. Yet, some double seaters are as fast as the pursuit plane we now have in service.

If a sudden clap of thunder coming from the political skies were to engage us in a conflict with a great power, we should be lost before starting.

I agree entirely with Morvan when he says that "the evolution of the airship considered as an engine of war has been at a standstill since 1918."

Is it a ministry or a great independent chief—he would have to be an aviator and young—that we need?

French aviation is looking for a man.

C.B.

JAPAN

Secret of Japanese Efficiency

Naval and Military Record, June 8.—The tour of our Royal Dockyards which three officers of the Imperial Japanese Navy attached to the Japanese Embassy in London have been carrying out serves to remind us of the secret—if there is indeed any secret about it—of Japanese naval efficiency. No class takes its profession more seriously than Japanese naval officers. Indeed, they probably take it rather too seriously, to the exclusion of that wider vision of general world affairs which is of quite as much value in the Navy as anywhere else. They are always learning, and never permit a patriotic consciousness of the very high standard attained by their own service to prevent them from seeking ideas for the advantage of that service. This, of course, has brought upon them the reproach of being imitative. It is a reproach they can afford to bear with equanimity. All navies are imitative, "adopting" one another's best ideas, and trying to improve upon them. The modern Japanese Navy is certainly very largely modeled upon the British Navy. When she entered upon her new era of expansion after centuries of self-containment, Japan came to this country for guidance, advice and instruction. Many of her earlier armored ships were built in British yards.

The result was that the Japanese Fleet grew up very much in the likeness of the British Fleet. But with experience came initiative and originality of conception, and today the Japanese Navy, quite as much as any other navy, has a distinctive character of its own. It was said that the almost slavish following of foreign example would

result in a want of individuality, that imitation was bound to produce a mechanical personnel. The achievements of the young Japanese Navy in the war with China, and later in the war with Russia, demonstrated what a mistaken conclusion this was. The truth is the Japanese race possess a power of adaptation which no other nation can equal. They were not content with merely acquiring modern weapons when they came to realize how utterly medieval their own were; they thoroughly mastered the principles which had brought these weapons into being. The resources of Japan for warship construction are but imperfectly realized by the Western world, and it is not her habit to boast about them. In the *Nagato* type she possesses as formidable a battleship design as any in the world with the sole exception of our two new *Nelsons*. In the *Kiso* class she produced the fastest cruisers in the world. Her destroyers and big submarines we hear little about, but there can be no question as to their high efficiency if only for the reason that the Japanese make it their special business to study the destroyers and submarines of other nations and then add their own ideas to all that is best in other people's.

ITALY

Naval Notes—
New Constructive Program

Le Yacht, June 4.—According to recent statements of Admiral Siriani, Under-Secretary of State for the Italian Navy, Italy is preparing to carry out a new important program of construction. It will include: three submarines already ordered, one of them to have a long cruising radius and two a more limited radius, the latter being mine layers; six other submarines of 800 tons about to be ordered; twelve destroyers of 2,000 tons capable of attaining a speed of thirty-eight knots, and finally four very fast scouting cruisers of 5,000 tons.

Aviation

Revue Maritime, April.—In his message to the Italian people delivered through the press, Mr. Mussolini gives the following account of the accomplishments of fascism in aëronautics:

> In 1922, we had only nine schools; today, we have fifteen. In 1922, there was no air line; today, four are already in operation. In 1922, Italian aviation effected only 4,220 hours of flight; this year, we have already exceeded 42,581 hours from January to September (1926). In 1922, there were no long distance flights; in the last two years, Nobile, de Pinedo, Locatelli, Maddalena, Bolognesi, Storioni, Talchi, spread Italian wings the world over. In 1922, we had 400 pilots. Today, we have 1,195 in line and 385 at the schools. Finally, in 1922, there were in all 600 planes, for the most part old, damaged and unfit for use. Today, we have 1,678 completed and 350 in construction. These are figures and not prattle.

GERMANY

Subsidies to Naval Constructors

Revue Maritime, May.—The Minister of Communications of Germany has developed a plan for the maintenance of the industry of naval construction, which is understood to have the support of the government. In 1925, the German naval construction industry received a subsidy of 50,000,000 marks; in 1926, 19,500,000. But the greater part of these funds has been exhausted; it served apparently to revive small works which were doomed to close. However, these heavy subsidies enabled the big companies to develop their new building. It is thus that the volume of orders passed from 6,000 tons in June, to 10,000 in August, to 25,000 in September, to 87,000 in October, to 127,000 in November, to 172,000 in December, to 175,000 in January last. Thanks to the increase of these subsidies, the German naval construction industry was enabled to borrow, during a period of about six years, 1,200,000,000 marks at a rate of interest from one to two and one half per cent below the usual rates. It is in consequence of this advantage that the North German Lloyd was enabled to undertake the building of its two new ships. Nevertheless, in Germany the naval construction industries are much reproached for being behind times in method and organization compared with the greater part of the other German industries.

Replacement of Ships

Le Yacht, June 4.—The German Admiralty intends to replace the oldest battle ships of 1903 and 1906 by units of a new type of 10,000 tons *standard,* but in reality of 12,000 to 13,000 tons. These new ships are to have a low speed and a limited cruising radius. They are to be propelled by Diesel motors. Their protection will be highly perfected and their armament very powerful, no doubt consisting of eight pieces of 406 mm. They are to be heavy monitors,

securing for the German Navy indisputable artillery superiority in the Baltic.

Germany, it is understood, is still hesitating between such ships and line ships of 10,000 tons which would really be fast protected cruisers, propelled by Diesel motors, armed with six or twelve pieces of 203 mm. solidly protected, and therefore superior to all light cruisers of the Washington type now either in construction or in service in the various navies.

AVIATION

Aviation Signaling and Safety

W. V. Gilbert in *Aviation*, May 30.—With the impending rapid developments and extension of aviation generally the time has arrived when close consideration will have to be given to some aspects of flying which have hitherto received but scant attention.

One item that will require urgent investigation is signaling from and to aircraft. Some methods of signaling are, of course, already in use but they have not been codified, made uniform, nor obligatory. Nor is their use sufficiently extended. If this state of affairs be allowed to continue, it will lead away from safety; it may lead to chaos.

Such a situation would be deplorable, for safety is the principal objective. The science and practice of aviation is comparatively new. We pioneers want to see it come into its own and take the place in transportation, sport and utility that it will be abundantly entitled to. But (and here is the difficulty) the great majority of the peoples of all countries look at flying askance if not with fear. It is all right for the other fellow to fly, but the ordinary man, he will have none of it. The causes that have brought about such a situation are fairly apparent. How can they be removed?

Safety must become the preëminent objective of all the operators of aircraft as well as of the designers. Safety connotes many things besides the mere questions of design and strength of members. The term can have, and does unfortunately have, a very elastic meaning. The designer will think of it in terms of materials and disposition of materials and he, as far as his functions are concerned has not much else to consider. The operator will think of it from the point of view of how much weight of goods or how many passengers or how much mail he can transport at a profit. The pilot will think of it mostly from the point of view of taking off and alighting. But in the finality the views of the *public* must and will prevail, because it is to them that the makers and the operators of aircraft will have to look for an increased production demand.

Public Skepticism

The public are at present skeptical of flying. They read of the accidents that occur all too frequently. They know that no matter who is the maker of the machine, or what expense has been incurred in its building, or what care is exercised in its operation, there are an alarming number of accidents, many of them fatal, and they hesitate to adopt a means of transport which is not quite as cheap as the usual methods of getting about and is, to their minds at least, extremely risky.

So again one's thoughts are back at safety. Very rarely does a machine break up in the air. Such mishaps have occurred but it is well-known that the great preponderance of accidents to machines and passengers occur when the machine is landing; whether the landing be a forced landing or otherwise is not the material factor. Unforeseen landings are frequent. They may be caused either by the engine giving out, or by the supply of gasoline giving out, or the pilot may have detected some mishap in one or another part of the machine, or he may have overflown his destination or lost his bearings. With the general adoption of airplanes the latter will be a frequent cause of this type of landing. The unsafe moments of flying will in any case continue to be, in the main, the moments when the machine is about to alight.

Problems of Landing

It is with false landings that a great part of the trouble arises. The pilot is all right if he knows the landing field well and if the winds are fairly moderate and constant. One assumes that by far the largest percentage of landings will take place in daylight. But what if the landing field be unknown ground, what if the weather be misty, what if there are low flying clouds, what if there is a strong wind or gusty wind and the pilot is unaware of the intensity or direction? Remember that the wind on the ground level may be something of quite a different order to the wind at 2,000- or 3,000-foot altitude or

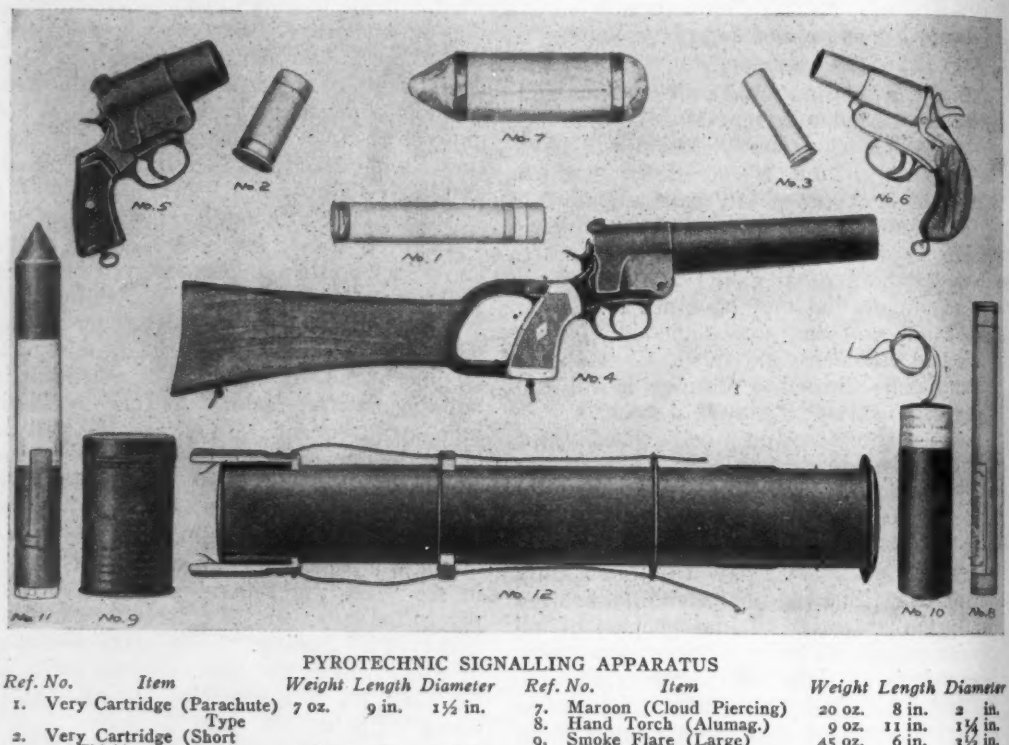
low lying mist may have blotted out the ground entirely, or heavy rains may have turned what otherwise should have been a safe landing field into temporary bog land. Under any one of such conditions the pilot would give a great deal to know with exactitude the actual state of affairs, and this can best be communicated to him by *visible signals.*

Signaling therefore will become the major thing in the attainment of safety. Of the various methods of signaling the one that can

use is being rapidly extended there but a danger lies even in this, and the danger is that unless rules are formulated and standardized and enforced chaos may result.

It would be well if some central authority would formulate rules for the consideration of the aëronautical bodies. At the outset the rules cannot be harsh or arbitrary; they must be drafted more in a spirit of educational progress.

But whatever the rules, whatever the manner of their inception, and whatever the ex-



PYROTECHNIC SIGNALLING APPARATUS

Ref. No.	Item	Weight	Length	Diameter
1.	Very Cartridge (Parachute) Type	7 oz.	9 in.	1½ in.
2.	Very Cartridge (Short Thick)	3½ oz.	4 in.	1½ in.
3.	Very Cartridge (Small)	2½ oz.	4 in.	1 in.
4.	Very Pistol (Large)	8 lbs.		1½ in.
5.	Very Pistol (Aviation) (Special)	3¾ lb.		1½ in.
6.	Very Pistol (Small)	2½ lb.		1 in.
7.	Maroon (Cloud Piercing)	20 oz.	8 in.	2 in.
8.	Hand Torch (Alumag.)	9 oz.	11 in.	1¼ in.
9.	Smoke Flare (Large)	45 oz.	6 in.	3½ in.
10.	Wing Tip (and General Illumination)—Flare	16 oz.	9 in.	2 in.
11.	High Altitude Rocket	16 oz.	14 in.	1¼ in.
12.	Launching Tube (for Parachute Landing Flares)			

most readily and inexpensively be adopted is *pyrotechnic signaling,* that is, signaling by devices which will give off smoke during the day time or by devices that will burn with an easily distinguishable light at nighttime. Occasionally an additional effect may be needed, something that will emit sound or perhaps a combination of sound and light or sound and smoke. All such devices are in use to a limited extent already and especially are they in use in Great Britain and various other countries in Europe. Their

tent of their use, the devices or apparatus utilized for carrying them out must be reliable, simple and consistent.

No apparatus or devices can live up to such requirements so well or so satisfactorily as pyrotechnic signals. The signals and the apparatus for handling and operating them can be made simple, safe, inexpensive, and light in weight and a thorough understanding of their use and operation is well within the comprehension of the ordinary individual. The code likewise would not be

outside the scope of an ordinary intelligence. No Morse or other system of the kind would have to be learned. The technique would be quite elementary. No heavy or delicate or complicated parts are required. The interpretation of the signals nevertheless is definite and easy.

Take for example Very cartridges. These behave like rockets, but have not the disadvantage of the usual stick. They are light, easily stowed, easily handled, easily discharged. The cartridges are charged with stars or smoke balls to burn with different colors which are readily visible and distinguishable for miles. The Very pistol (sometimes called a rocket gun) which is used to discharge them is loaded just as one loads an ordinary shotgun and the pull of the trigger sets off the cartridges with like simplicity, readiness and lack of effort.

A red star could be discharged to mean "I want to land." A second red star might mean, "What is the condition of the ground?" A yellow star might read, "Do you want me to land?" A green star might mean "I am short of gasoline, have you any supplies?" The groundsman could reply with a white star or a star of any other color which would convey a definite meaning to the pilot aloft. This would be simple, unmistakable, inexpensive and quick. Of course if such inquiries or instructions were taking place in daylight a smoke ball cartridge would be used. The pilot would have to carry say six or twelve cartridges and one pistol. The landing field would require as part of its equipment a pistol and cartridges for its own signaling requirements and a small reserve of pistols and cartridges for supplying pilots as the need might arise. If the ground is obscured by a mist the groundsman could use a cartridge having a proportionately higher range of elevation than the normal Very cartridges, or the aviation Very cartridges could be standardized all to such a range as would render them applicable for general use.

When there are low lying clouds, visibility may be perfect on the ground; but clouds at a height of 2,000 or 3,000 feet are in any case a bother to a pilot who wants to land. For such conditions the groundsman would have available a cloud piercing maroon made to give a compound sound and light signal. Such maroons will reach a ceiling of 1,500 to 2,000 feet. They are fired from a small mortar. The airplane pilot would first discharge a smoke ball, or light star, directly toward the ground or he could use a smoke flare which when dropped from the airplane would continue to burn for a minute or more. He would then circle about the position where he discharged the signal and the groundsman would fire his maroon in a direction away from such a position. One maroon might mean "quite safe to drop through the cloud, visibility is perfect to 1,000 feet."

As to signals peculiar to ground use, aluminum flares or torches of various sizes can be used to illuminate the landing field. They are readily portable and comparatively inexpensive. Smoke flares can be used on the ground to indicate the direction and intensity of the wind. Naturally they can also be used for other purposes. But it is desirable that any one signal should have a definite meaning. There are also wing-tip flares. These are of considerable assistance to a pilot in an emergency landing at night. Reserves of these, as of the other signals, should be carried in the airdrome. These wing-tip flares have the special virtue that if the ordinary landing flares run out they can be used for emergency ground illumination purposes.

As to the functioning of the various devices, Very cartridges are set off by a percussion cap and are about the simplest of all pyrotechnic devices to use. Maroons are set off by a small friction tube. Flares, including landing flares and wing-tip flares, can be set off electrically or by friction or by safety fuse. The percentage of failures in these pyrotechnic signals is so small that it is negligible, and they have the advantage that if there is a misfire or if for any other reason one fails to function the operator can see that it has failed and can discharge another one immediately.

More long distance flights have been attempted and are about to be attempted. It is a sad commentary on the present relative inefficiency of airplanes that it should be necessary to circumscribe loads so drastically. Whatever accessories have to be dispensed with, signaling apparatus should be retained. If an airplane alights on the water the distance from which it can be seen by fishing boats or even liners, is very limited even in clear weather. But if the pilot had Very pistol and cartridges, the chance of his being picked up would be immensely increased. The star from the cartridges

travels upward for several hundred feet and cartridges are made which give off easily discernible smoke clouds in daytime or very brightly burning colored stars at night-time which can be seen from the water level for many miles.

It is unfortunate, but very pertinent, that only quite recently we have been faced with situations where possibly the use of pyrotechnic signals might have saved valuable lives if not also saved valuable machines.

And so, strange as it first appears, we come to this—that pyrotechnic signaling devices are essential for the safety of aircraft; perhaps more important with respect to the successful conduct of general flying than any other single unit of equipment.

CURRENT BOOKS AND ARTICLES

CURRENT BOOKS

London Times, May 18.—Five large volumes dealing with questions of international law during and after the war are about to be published by the Third Research Sub-Committee of the Reichstag.

The subjects treated include the violation of Greek neutrality, the devastations of Northern France, during the German retreats of 1917 and 1918, gas warfare, the *U*-boat campaign, and the deportation of civilian laborers from Belgium to Germany, and from Alsace-Lorraine to France.

The violation of Belgian neutrality is, however, not discussed on the ground that such a discussion demands the exposition of the political events connected with the outbreak of the war. The First Sub-Committee is still at work on this exposition, and the Third Sub-Committee will not proceed to consider the Belgian neutrality question until the First Committee's decisions are published.

Magnetism and the Deviation of the Compass in Iron Ships. Ainsley, T. L. New Edition.

The Distribution Age, Ralph Borsodi. A study of the economy of modern distribution.

The Philippine Republic, L. H. Fernandez. A study of the Philippine revolution, using that term to mean the armed conflict which began as a revolt against Spain and ended as an act of resistance to the United States.

Imperial Defense, 1588-1914, Col. J. F. C. Fuller. A brief account of its growth.

British Archives and the History of the World War, Hubert Hall.

Land, Sea and Air, Admiral Mark Kerr. Memoirs of Admiral Kerr.

The Oil War, Anton Mohr. An account of the recent history and the future prospects of the oil problem.

China and the Powers, H. K. Norton. Up-to-date facts on China's relations with foreign countries.

Balistique Interieure, J. Ottenheimer. Pt. 1. Les Bases Experimentales. 2. La Balistique Interieure Theorique. 3. La Balistique Interieure Appliquee.

James' Fighting Ships, 1926, Parkes and McMurtrie. Authentic encyclopedia of all the navies of the world.

Industrial and Commercial South America, Annie S. Peck. A comprehensive and complete book of up-to-date facts about South America. Revised and reset. With maps.

The U. S. Navy from the Revolution to Date, Francis Reynolds. A book of illustration of the Navy's ships and sailors.

The Philippines, Nicholas Roosevelt. The latest survey of conditions in the Philippines.

Color-Sense Training and Color Using, E. J. Taylor. A résumé of the scientific and æsthetic facts about color, correcting common errors in regard to the nature of pigments.

Standard Yearbook, 1927, U. S. Bureau of Standards. Contains outlines of the activities and accomplishments of the agencies of the Federal Government and the states and municipalities, also of the American societies and associations of which standardization is a very important activity. Outlines are given of the various foreign, national and the several international standardizing agencies.

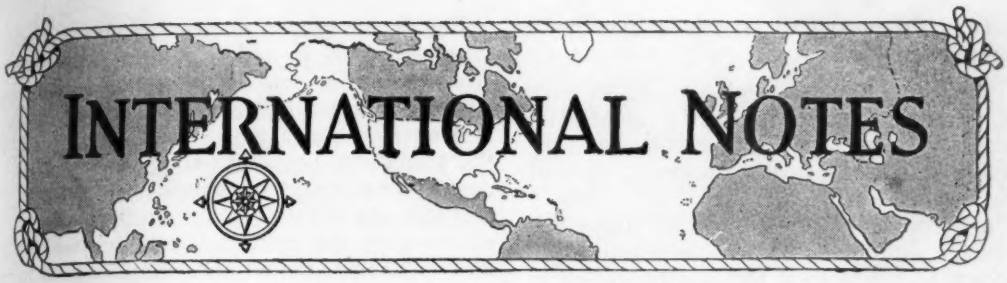
Variety, Paul Valery. Essays on intellectual and literary subjects.

The New Latin-America, J. Warshaw. An interesting study of our southern neighbors.

CURRENT ARTICLES

"The Salvaging of the Ex-German Battle Cruisers *Moltke* and *Seydlitz.*" *Engineering,* June 17.

"The Lessons of Jutland" by Rear Admiral J. E. T. Harper, C.B., M.V.A. The *Journal of the Royal United Service Institute.*



FROM 1 JUNE TO 1 JULY

PREPARED BY PROFESSOR ALLAN WESTCOTT, U. S. NAVAL ACADEMY

THREE POWER NAVAL CONFERENCE

AIMS OF POWERS.—The Three Power Conference for Limitation of Naval Armament held its first meeting at Geneva on June 20, and when this issue of the PROCEEDINGS went to press was still in session. The chief representatives were Ambassador Hugh L. Gibson and Admirals H. P. Jones and A. T. Long for the United States; First Lord of the Admiralty W. C. Bridgeman, Viscount Cecil, Admiral Jellicoe and Admiral Field, Deputy Chief of Staff, for England; and Viscount Ishii and Admiral Saito for Japan. In general terms the American delegates sought to apply the 5-5-3 ratio to cruisers, destroyers, and submarines, with the definite tonnages for each nation in each class, not far below the present status. The British desired to reopen the question of capital ship tonnage and if possible secure further reductions in this type, and in the second place to limit and eventually eliminate 10,000-ton, eight-inch gun cruisers, and maintain their predominance in smaller cruisers of 7,500 tons and six-inch guns, which with the many British bases would be of equal value to them, while giving increased potential value to the forty or more liners and large vessels of their merchant marine which could be armed with six-inch guns. The Japanese proposals were not easy to grasp, but proposed limiting the tonnage of each nation in auxiliaries to vessels now built or building while excluding from consideration small submarines and aircraft carriers under 10,000 tons. It allowed for certain "special adjustments" to balance fleets, such as substitution of cruisers for destroyers by the United States.

An expert committee was formed on June 21 to reach agreement as to the existing tonnage of auxiliaries of each of the three nations, and study the three sets of proposals. As the conference went on, it became clear that the American delegates would firmly refuse to consider reopening the capital ship question, prior to the next general conference in 1931, and Japan acquiesced in this view, although at the time she appeared willing to endorse the British proposal. Furthermore, the United States refused to consider the elimination of 10,000-ton cruisers, or to grant Great Britain's need of greater cruiser tonnage than ours. Great Britain disclaimed any desire to exceed the United States in total naval strength. On June 30, the expert committee agreed to limit destroyers to 1,000 tons and destroyer leaders to 1,850 tons, and to apply the term *cruiser* to auxiliary vessels of larger tonnage. To indicate the aims of the three powers, whatever the final decisions reached, the proposals of each nation are here given.

UNITED STATES PROPOSALS

1. The proposed new treaty to supplement the Washington Treaty should be coterminous with it and contain provisions for extension or modification similar to those of the Washington Treaty. It might be desirable to provide for the possibility of reconsideration in the event that the requirements of national security of any contracting power in respect of naval defense are, in the opinion of that power, materially affected by any change of circumstances.

2. Provisions for the limitation of auxiliary naval armament should be by classes of vessels as follows:

(a) The cruiser class.
(b) The destroyer class.
(c) The submarine class.

(d) An exempt class, not subject to a limitation.

3. Limitation by total tonnage in each of the several classes should be modified as necessary to provide for transition from the status quo to the final tonnages in each of the several classes.

4. The United States, while suggesting tonnage limitations of various classes, will accept as low a total tonnage limitation in each of the several classes of auxiliary vessels, on the basis of the principles of the Washington Treaty ratio, as the British Empire and Japan will accept.

Definitions.—The cruiser class shall include all surface naval combatant vessels which are of standard displacement of more than 3,000 tons and not exceeding 10,000 tons and not carrying guns exceeding eight inches in caliber.

The destroyer class shall include all surface naval combatant vessels of standard displacement of 600 tons and not more than 3,000 tons, which have a designated speed greater than seventeen knots.

The submarine class shall include all vessels designed to operate below the surface of the sea.

An unrestricted class to include vessels of limited combatant value. The technical definition of vessels to fall within such a class should be the subject of future agreement.

Replacement.—The age limit for replacement in the several classes shall be as follows:

(1) Cruisers, twenty years;
(2) Destroyers, fifteen to seventeen years.
(3) Submarines, twelve to thirteen years.

Limitations.—Proposals for tonnage limitations by classes:

Cruiser classes.—For the United States, 250,000 to 300,000 tons.

For the British Empire, 250,000 to 300,000 tons.

For Japan, 150,000 to 160,000 tons.

Destroyer Classes.—For the United States, 200,000 to 250,000 tons.

For the British Empire, 200,000 to 250,000 tons.

For Japan, 120,000 to 150,000 tons.

Submarine Class.—For the United States, 60,000 to 90,000 tons.

For the British Empire, 60,000 to 90,000 tons.

For Japan, 36,000 to 54,000 tons.

In order to provide for the transition from the status quo to the proposed definitive tonnage limitation in the cruiser and destroyer classes, it is suggested that during the transition period existing cruiser and destroyer tonnage be considered together and that the tonnage to be scrapped be the excess over the combined cruiser and destroyer tonnage limitations. Replacement in each class should, however, only be permitted within the allowed maximum tonnage of that class. As applied to cruisers on the basis of a total tonnage of 300,000 tons and to destroyers on the basis of a total tonnage of 250,000 tons, the proposal would work out as indicated below:

(a) The total combined tonnage of both cruiser and destroyer classes of vessels of all ages shall not exceed at any time:

For the United States—550,000 tons.
For the British Empire—550,000 tons.
For Japan—330,000 tons.

(b) The total tonnage of the cruiser class, less than twenty years old from date of completion, shall not be augmented so as to exceed:

The United States—300,000 tons.
The British Empire—300,000 tons.
Japan—180,000 tons.

(c) The total tonnage of the destroyer class, less than fifteen years old from date of completion, shall not be augmented so as to exceed:

The United States—250,000 tons.
The British Empire—250,000 tons.
Japan—150,000 tons.

(d) All excess in the allowed combined tonnage of vessels of the cruiser and destroyer classes now existing shall be scrapped. The choice of vessels to be scrapped shall be made by the power whose vessels are to be scrapped. Within the allowed tonnages no vessels scrapped shall be replaced until the date when she would have reached the age limit of her class.

BRITISH PROPOSALS

Proposal No. 1 at once brought the Washington agreement into discussion by bringing up ship categories already decided at Washington in 1921 and definitely out of consideration at Geneva under the terms of the Coolidge invitation.

This proposal was to extend the accepted life of battleships from twenty to twenty-six years, which would force the United States to keep in commission for that much longer time thirteen ships with a fifteen degree gun elevation and maximum range of 22,000 yards against twenty-two British ships with a twenty degree elevation and a minimum range of 24,000 yards.

Proposal 2 was for limiting the life of eight-inch gun cruisers to twenty-four years, of destroyers to twenty years, and submarines to fifteen years, against the American suggestion of twenty, fifteen and twelve years. If the British plan were accepted, that nation would be forced to scrap about 80,000 tons in the cruiser category, while America would be obliged to build up to 150,000 tons over the present program, which calls for cruisers not yet begun.

Proposal No. 3 was a reduction in size of battleships "to be built in future" from the present limit of 35,000 tons to "something under 30,000 tons." This would permit Britain to keep her new ships, the *Rodney* and the *Nelson*, each mounted with nine six-inch guns and which are the most formidable vessels ever launched, while the biggest American units would remain the *West Virginia* and *Maryland*, with inferior armament and already six years old, while Japan's chief units are already three years old.

Proposal No. 4 was a reduction in the future size of guns in battleships from the present limit of sixteen-inch to thirteen-and-a-half-inch. This would keep the American Navy in third place so far as armament is concerned as it would be impossible to build up to the agreed tonnage ratio except with smaller guns.

Proposal No. 5 was limitation of the displacement of aircraft carriers to 25,000 tons, instead of the present 27,000.

Proposal No. 6 was a reduction of guns on aircraft carriers from eight-inch to six-inch. This would force the United States to scrap the *Lexington* and *Saratoga*, each 35,000 tons, with eight-inch guns, while Britain retained six carriers already of 25,000 tons. Reduction in the size of guns would, in addition, permit forty-two British merchant ships of more than twenty knots speed to be converted into this category. They are now unable to mount eight-inch guns, but six-inch ones would fit perfectly—according to both British and American naval architects.

Proposal No. 7 was acceptance of the existing ratio of 5-5-3 for cruisers of 10,000 tons and eight-inch guns. This would permit the United States to carry out the present Congressional authorization of ten such boats, which would bring the total to only 155,000 tons, or fifty per cent short of the total suggested by Mr. Gibson in his presentations.

Proposal No. 8 was a limitation of 7,500 tons and six-inch guns on all future cruisers after the number of 10,000-ton cruisers had been decided upon. This is the kernel of the British proposals, for it is well known that everything under this size of ship can only mount six-inch guns. This, therefore, would let in the entire British merchant marine. This British thesis was supported by Japan, who has a mysterious clause in her program as read by Admiral Saito asserting that ships with a maximum of four six-inch guns do not come within the competence of the conference.

Proposal No. 9 was limitation of the displacement of destroyer leaders to 1,700 tons and of destroyers to 1,400 tons. Great Britain now has eighteen destroyer leaders, or super-destroyers, mounting five-inch guns, against American destroyers with four-inch guns, so that America would have to build hastily up to this number of ships and equal caliber if she wanted to keep the ratio.

As to the destroyers themselves, it is the only class in which the United States now leads, except that more than half, according to naval experts, are now obsolete. One hundred and six in commission are due for the scrap heap in two more years if the American age limit of twelve years suggested by Mr. Gibson is adopted. Under British proposals America must keep these boats eight more years, building no new ones meanwhile, as she is already up to the proposed destroyer ratio.

Large type submarines would be limited to 1,600 tons and small type to 600 tons. This would immediately render useless all American seagoing submarines, three of which are built and three more authorized, of the *Y* type displacing 2,100 tons. Fifty coastwise American submarines of the *S* type of 800 to 900 tons also are too big to meet the British idea.

This, according to Mr. Bridgeman, forms part of Britain's avowed campaign against all submarines as a direct menace to her

merchant marine as they proved in the last war. His proposal, however, would permit five-inch guns for all types, whereas only America's six big submarines, which would need to be scrapped under such an arrangement, carry guns of that caliber, the smaller submarines mounting four-inch guns.

JAPANESE PROPOSALS

N.B. Capital ships and aircraft carriers covered by the Washington Naval Treaty are not included in this proposal.

1. None of the conferring powers shall, for such period of time as may be agreed upon, adopt new building programs or acquire ships with the purpose of increasing its naval strength.

2. By the term "naval strength," used in Article 1, is meant the total tonnage comprised in the category of submarines to be agreed upon on the basis (*a*) of the tonnage of completed ships actually possessed by each power which have not reached the replacement age specified in Article 4 and (*b*) of the designed tonnage of ships now in course of construction by that power.

In determining the naval strength to be allotted to each power (*a*), the designed tonnage of ships not yet laid down but which are embodied in authorized building programs and (*b*) the tonnage of ships which will pass the replacement age during the execution of such programs shall also be taken into consideration.

3. The following ships are excluded from the application of the foregoing two articles:

(*a*) Ships not exceeding 700 tons in displacement.

(*b*) Surface ships carrying no gun exceeding three inches in caliber or carrying not more than four guns exceeding three inches and not exceeding six inches in caliber, with or without any number of guns not exceeding three inches in caliber, provided, however, that the speed thereof shall not exceed twenty knots.

(*c*) Aircraft carriers under 10,000 tons.

4. Each power may replace ships which shall have passed the ages hereunder specified or which shall have been lost by the construction or acquisition of ships of the corresponding category within the limits of the naval strength prescribed under Article 2.

Surface auxiliary craft above 3,000 tons, sixteen years; under 3,000 tons, twelve years; submarine, twelve years.

Provided that, although the normal ages for the replacement of ships are those above specified, exceptions may be permitted in case the conditions at present prevailing call for any special adjustments to be made.

5. Any tonnage in excess of the naval strength prescribed in accordance with the provisions of Articles 1 and 2, as also any ships replaced by others under the provisions of Article 4, shall be disposed of according to the provisions to be agreed upon.

6. Appropriate regulations shall be provided in respect of replacement construction in order to avoid sudden displacements of naval strength as between the conferring powers and to equalize as far as possible the amount of annual construction undertaken by each.

MEETING OF LEAGUE COUNCIL

GERMANY ASKS VOICE IN MANDATES.—At the regular quarterly meeting of the League of Nations Council at Geneva in the middle of June, the German delegate, Foreign Minister Stresemann, took, as has been his practice, the opportunity to bargain with France and England over the evacuation of the Rhineland, proposing that, if the demand for immediate evacuation were not pressed, Germany should be given in compensation a seat on the commission for supervision of mandates. This demand took M. Briand and Mr. Chamberlain by surprise, but otherwise brought no results at the time.

Aside from routine matters, the council was called upon to consider a protest registered by Albania against Jugoslavia for "brutal and unconciliatory demands" made for the release of an interpreter attached to the Jugoslav embassy in Albania and arrested by Albania as a spy. This was followed immediately, June 5, by rupture of diplomatic relations. The Albanian protest, it was believed, was supported if not inspired by Italy, which thus succeeded in casting on Jugoslavia the onus of blame for the present dangerous tension along the Jugoslav-Albanian frontier.

FRANCE

NO DEBT AGREEMENT RATIFICATION.—Replying to an interpellation in the Chamber, early in June, M. Poincaré for the first

time came out with the definite statement that he did not intend to call for the ratification of either the Franco-American or Franco-British Debt Agreements. He declared that he expected to secure better terms, and felt that it would be useless in any case to ask Parliament to ratify the present agreements.

PEACE TREATY PROPOSALS.—The informal suggestion made by M. Briand last spring for a treaty between France and the United States "outlawing war" took more definite shape in draft proposals which Ambassador Herrick brought back from Paris late in June. The proposals, said to be very simple and direct in form, will not be made public until after further negotiations in Washington.

CABINET RIDICULED FOR DAUDET RELEASE.—France and the rest of the world were amused by the news that on June 25, the French Royalist leader and editor Leon Daudet, imprisoned for attacks on the police and government, had been released by the simple device of sending "faked" orders for his release from the Ministry of the Interior during the noon hour. An imprisoned communist leader was set free at the same time. It was believed that the ridicule arising from the affair might weaken the Poincaré Cabinet.

RUSSIA AND EASTERN EUROPE

ASSASSINATION OF SOVIET ENVOY.—While welcoming at Warsaw the Soviet *chargé d'affaires* expelled from England, the Soviet ambassador at Warsaw, Peter Vojkov, was shot and killed on June 7 by a former Russian royalist—a youth named Boris Kovenho. For a time the affair threatened international complications. A series of notes was exchanged between Warsaw and Moscow, the Soviet government demanding a share in the investigation and a general sweeping up of royalist plotters in Polish territory. The Polish government expressed regret and made numerous arrests, but refused to take seriously the more violent Soviet demands, regarding them as intended chiefly for home consumption.

SOVIET TERRORISM RENEWED.—Following the break with England and the murder of Vojkov, which the Soviets attributed to British agencies, a renewed campaign against counter-revolutionaries was instituted by the Soviet authorities. Up to June 15 it was reported that fifty-five executions had taken place since Vojkov's death. A proclamation was issued at Moscow on June 9 purporting to give concrete evidence of British hostile activities in Soviet territory and calling for "decisive measures against spies, incendiaries, murderers, and their tzarist and white allies."

RUMANIAN CABINET UPSET.—The Averescue Ministry in Rumania resigned on June 5 under orders from King Ferdinand, and a new so-called "national cabinet" was formed under Prince Babu Stirbey. The Averescue ministry was created in March, 1926, after the resignation of Premier Bratiano, the "hereditary dictator," but was regarded as a mere screen behind which Bratiano continued to run the country. Prince Stirbey is a brother-in-law of Bratiano, and the change is thus not likely to upset Bratiano's hold on Rumanian politics or his opposition to Carol as heir to the throne.

FAR EAST

FENG AND CHIANG JOIN HANDS.—Negotiations early in June between Chang Tso-lin and Chiang Kai-shek, the chief leaders in Northern and Southern China, apparently came to no result. A subsequent agreement, however, was reported between Chiang and the "Christian general," Feng Yu-hsiang, which promised a decided strengthening of the Nationalist forces. As a result of this agreement, Feng sent a telegram to Hankow demanding the expulsion of all communists and the return of Borodin to Russia. He also agreed to join in a concerted drive toward Peking.

During June, Nationalist forces continued their advance into Shantung province and were reported on June 21 in possession of the port of Tsing-tao, and later in occupation of Hangchwang. Southern army leaders charged that Japanese troops in Shantung were fighting on the side of the Northerners, and although this was not fully substantiated, a virulent anti-Japanese propaganda was carried on throughout Nationalist China, and the anti-Japanese boycott at Shanghai gained strength.

In view of threatened hostilities in the North, 16,000 troops were sent by the powers early in June from Shanghai to Tientsin, including 1,600 U. S. marines and 400 artillerymen.

SUMMARY OF "FOREIGN AFFAIRS" QUARTERLY

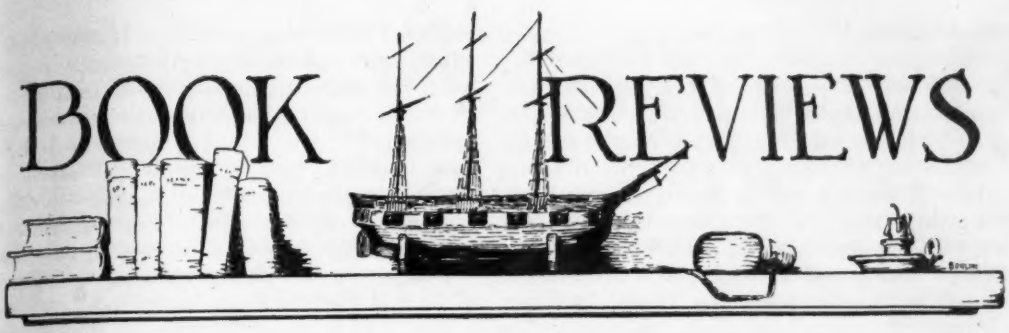
THE MIDDLE WEST LOOKS ABROAD.—*Foreign Affairs* Quarterly for July has several articles of unusual interest and significance. In "The Middle West Looks Abroad" Arthur Capper points out the greatly increased interest of farmers in international matters, due to (1) their desire for tariff protection for wheat and other farm products, (2) their concern over the success of Canadian coöperative wheat marketing and over increased imports to the United States of Canadian wheat and Argentine cattle, and (3) their enlarged outlook as a result of the World War and their coöperation in international agricultural organizations.

FRANCE VS. ITALY.—In "France and Italy" Henry de Jouvenel shows the causes of increased ill feeling between France and Italy to be: (1) Italy's desire for a colonial partnership with France in which "Italy would supply the partner and France would supply the colonies"; (2) Italy's criticism of republican institutions and of France as a decadent people; (3) Italy's virtual assumption of a protectorate over Albania by the Treaty of Tirana, November, 1926, in which maintenance of the "political status quo" in Albania is guaranteed by Italy without reference to the League of Nations; (4) Italy's aim to extend her influence in the Balkans; (5) Italy's naval superiority in the Mediterranean based on her naval equality with France and greater concentration of interests; (6) sharp friction and anti-French agitation on the frontiers.

SCRAPPING THE SUBMARINE.—*The Submarine* by Arthur Pollen argues, rather speciously, against the efficacy of the submarine and also the torpedo as instruments either against commerce or war vessels, and ends as follows:

> In June, before this article is published, the Geneva conference of the three great naval powers will be in session. Will either Great Britain or America lead off with a renunciation of the submarine?—with a double renunciation of the submarine and the torpedo too? It needs the first only of these to insure a sound principle for future discussions. Before the Preparatory Commission, Great Britain and the United States insisted that the limitations of naval effectives were dependent on every one acknowledging the principle that naval armament should be limited according to tonnage and by category. Great Britain modified this to include a modification of numbers as well as tonnage—but still according to category. The French held out for tonnage according to category, but not by numbers. It was left for Italy to propound the only sound principle, viz., that each country should arrange its total tonnage "to the best advantage of its national interest," regardless of categories—but giving six months' notice of the types of vessel it proposed to construct. Except on one theory it is inexplicable that Britain and America should have opposed the Italian suggestion. My theory is that the Navy Department and the Admiralty simply have not the courage to act as the balance of expert opinion dictates. Each is afraid of being the first to renounce the submarine and the torpedo—possibly because behind the deciding voice there is still the clamor of conflicting opinion. Does it not look as if we were keeping up our submarines and torpedoes, not because we believe in them ourselves, but because we fear the criticism that if others retain them we may be foregoing some unknown advantage?
>
> We have had ten years now in which to think things over. The facts of the war are there and the lesson of their analysis is unmistakable. For practical purposes the submarine has not rid itself of a single limitation, nor has the torpedo added to its real efficiency. That it has a larger head and greater range has, of course, added to the destructive power of the head, and the range at which a hit may conceivably be made. But power and long running have been purchased at a cost. The probability of hitting, both at short range and long, is manifestly lower than that of its predecessor. Meantime, it will be astonishing indeed if the means of countering the submarine have not multiplied and gained in force; if the means of detecting its presence have not improved; and if the weapons for destroying it, when located, have not advanced both in power and precision. Finally, the power of defending capital ships below water—one that was unsolved in 1914—is amply solved today. These Powers, then, that rely upon their battle fleets and therefore on their guns, have no excuse for retaining submarines at all, and would be well advised to balance the cost of torpedo armaments against the greater perfection which this expenditure can give them in the employment of what is unquestionably their main armament. If either Britain or the United States renounce even the submarine only, the way will be clear for adopting the Italian suggestion. A total tonnage limit would give free play to the judgment that can discriminate between the value of one weapon and another. So far as naval armament is concerned, it would not be long before the great Powers would recognize that the torpedo was obsolescent; the submarine out of date; and the seaplane of so limited utility that expenditure would not be enlarged by any such useless absurdities as aircraft carriers at twice the cost of battleships.

BOOK REVIEWS



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THE GREAT DELUSION. (A Study of Aircraft in Peace and War by "Neon.") New York. The Dial Press (Lincoln MacVeagh). $4.00.

REVIEWED BY MAJOR GENERAL JAMES G. HARBORD, *U. S. Army, (Retired List)*.

(EDITOR'S NOTE: General Harbord served as Chief of Staff American Expeditionary Force in France; was Deputy Chief of Staff, U. S. Army, after the World War, and retired in 1922, and since has been president of the Radio Corporation of America. He was a member of President Coolidge's Morrow Board, which investigated aviation and aëronautical conditions.)

The anonymous author who treats of a subject of current interest must produce a book of more than passing merit if it is to carry weight. This is the day of the specialist and readers demand a warrant for the voice of authority. This is particularly true when the work deals with a popular fetich, or threatens such a prolific source of press copy as aviation. So too, when its voice is out of tune with the world's applause of Colonel Lindbergh's matchless and heart-stirring flight to Paris—though merit is not measured by the gallantry of adherents and history rings with the romance of devotion to lost and unworthy causes.

For several years there have been few days when the press has not carried the items of contemplated, unsuccessful or accomplished "hops," or the adverse weather or other circumstances which have prevented them. The arrival or departure of good-will or round-the-world flyers; pictures of birdmen singly and in flocks; legislative appropriations for aviation; the organization of airplane manufacturers; the bidding for air-route contracts; and the long melancholy deathroll of eager and gallant flyers, the record of disaster and death, are familiar items to every reader. Somewhere, doubtless those who loved them mourn the departed flyers, but deaths in flying have become so frequent that with our public of short memories and brief regrets, they register now for but a moment. Who now remembers the ten Navy flyers killed this spring within as many days? Less than a month later what memories are awakened by the name of Noel Davis, where and how he died, and who died with him? And gallant John Rodgers, last of his honored line in our Navy? Lansdowne? Geiger? Maitland of the British service who commanded the *R-34* eight years ago in the first round-trip by air from England to America, and later died with forty-three others in the *R-38?*

The natural interest in so romantic, so hazardous and so spectacular an art as flying has been stimulated by every artifice known to propaganda. Soldiers and sailors are still studying the lessons of the World War, but aviators make claims in peace far out of proportion to their accomplishments in that war and already assert the obsolescence of armies and navies. Doughboys and troopers, gobs and gunners, are alike to be written off as a total loss in the national defense. The knights of the air, but a few years ago hailed as the heirs of medieval chivalry, are by their own conception of the next war to be assigned the horrid rôle of baby-killers

and destroyers of helpless cities crowded with non-combatants.

On this subject of aviation, of such tremendous interest to every American believing in his country's greatness, and keen for her safety, including the plain citizen whose daily duties are not incompatible with keeping his feet on the ground, there now appears a most convincing book. It is entitled *The Great Delusion,* a study of Aircraft in peace and war, by "Neon," a name, which for me at least, is a neonym. One may suspect the official character of the writer by his evident access to official documents. His serious and studious approach to the lessons of those documents proclaims him as one who is trying to serve his country. His worthiness of attention and that he is a Briton is indicated by the fact that a naval writer so well qualified as Arthur Hungerford Pollen writes for the book a preface of twenty-four pages. It is a work that should be read by everyone interested in aviation, its powers and its weaknesses. I note but one typographical error—on page 165, the date of the German drive on Amiens is given as *May* instead of *March* 21, 1918.

The Great Delusion treats:

1. Of the airship, its function in peace and war, its powers and its limitations.
2. The airplane, its place in peace-time commerce, its achievements in the World War and its promise for the next conflict.
3. The defense of London by air against attack from the air, which would be equally applicable to Boston, New York, Washington or any of our populous cities near the sea.

The Airship.—"Neon" lays down certain principles: A passenger and freight carrier should generally be able to start from its point of departure when desired, no matter what the direction of wind, degree of visibility or other circumstance of weather; travel on a time-table approximately reliable, and arrive at its destination when expected. Ships must be readily handled for berthing and be safe when berthed. Any vehicle to furnish safe and reliable transport must be free to stop without risk of disaster, and its stability at rest or in motion must be fairly secure. The useful cargo it will carry must be in reasonable proportion to the effort and expense, whether mail, men or merchandise. It must be safe and reasonably comfortable.

The airship, says "Neon," seems to meet none of these requirements. It moves with the currents of air as a cork upon the bosom of a stream. It cannot hold its own unless it has a power of motion equal to the rate of the current in which it operates. It cannot make a gain unless it has speed in excess of the current and it gains only the amount of such excess. Were currents of the sea as great as or greater than the speed of ships, forever changing in rate and direction and therefore uncharted and unchartable, regular and reliable navigation of the open seas would be hopeless, and that part of civilization which owes its origin to the sea would be still unborn. When at sea, but in sight of land, an airship may discover her location by reference to charts. When out of sight of land her position can be calculated by observation of the heavenly bodies, but only if those bodies and the horizon are in sight at the same time.

Safety when berthed implies harbors and anchorages, mooring masts, landing fields, repair shops, gas tanks and hangars. A mooring mast is a station where passengers, freight and supplies can be taken aboard, and minor repairs effected, *if weather permits.* It is not a haven in a storm. There is no haven for an airship caught by a storm en route. It must ride it out. An airship cannot, it is stated be brought out of its hangar in safety in a breeze of over fifteen miles per hour. It cannot land in a dead calm or a strong breeze.

Great airships cannot remain stopped in flight owing to lack of stability; airplanes because of the law of gravity. The airship only achieves stability through motion, and this induced stability is so slight that the loading and trim of the ship are among the most important factors of safety. With her engines stopped, her longitudinal stability is negligible. When some of the crew go forward others must go aft. Ballast, fuel, gasbags, passengers and freight must, on occasion, be shifted.

In airship transport the effort is enormous—the total result in useful load is negligible. Working out the "lift" of an airship as large as the *Mauretania;* the weight of ballast, fuel, oil, crew and stores; structure and machinery, "Neon" finds its capacity in paying load as eight and one-half tons at sea level. This is the ship intended for service between England and Egypt, a journey of two and one-half days, figured to a passenger list of 100 at 225 pounds, each being

165 pounds of person and sixty of baggage. It will never be popular with the heavyweights. Heavy dew, snow, rain, humidity, all affect the amount of "lift" available for fuel and useful load.

The cost of five airships completed by the British government in 1919-21 was £1,825,000 or about $9,000,000. The *R-38*, which was to have been bought by the United States was wrecked before delivery. It flew a total of seventy hours, but cost the British taxpayers £500,000. The airship hangar at Cardington, England, is 812 feet long, 180 feet wide and 180 feet high. Its corresponding unit at Karachi, India, will be larger and £172,000, or over $800,000 will be spent for it. The airship hangar and accessory establishments at Lakehurst, New Jersey, foots up to $5,121,876. The solitary horse in this stable is the *Los Angeles*. A German expert who has built airships for a quarter of a century, speaking of a proposed trans-Atlantic service, is quoted by "Neon" as believing the art so far advanced that airships can now be built to carry fifteen tons of paying load. Assuming three appropriate ships, making 100 voyages per year, fifty each way. the operational cost would be about £700 per ton, including in this tonnage passengers, mail and freight. Commercially organized to pay interest on investment and, with full loads, the rate would be £1,200 per ton or about sixteen cents per ounce. The appropriate cargo at such a tariff might perhaps be rubies or radium. The ordinary freight rate for the same trip by steamer is under £5 per ton. Steamships last, generally, for many years; airships are fortunate if their working life is as many months.

As to the safety and time-table reliability of airships, "Neon" points out that all airship flights have been thus far begun in favorable or promising weather with the exception of forced flights due to breakaways. Their experiences have shown that they are unreliable, exposed to danger from structural failure, lack of stability, lack of lift, striking high ground or obstructions, from fire, thunderstorms, of which there are an average of 44,000 daily, from vertical upheavals, from exhaustion of fuel, from uncertainty of landing and lack of havens. A means of transport that waits for favorable wind and weather is retrogression, not progress. The *Norge* of North Pole fame was arranged to leave Rome on April 2, 1926. Due to the weather she was unable to start until April 10. She arrived at Spitzbergen May 7. A ten-knot tramp steamer starting on April 2 could have covered the 3,780 sea miles between Rome and Spitzbergen in sixteen days, reaching the latter port on April 18. The thought may be ventured by some that ships of the air are still experimental. A generation has passed since the first modern ones were flown. Gifford flew a steam-propelled dirigible in 1852. Other models flew in 1872 and in 1884. Until man can control weather, airships will remain experimental.

The case for the airship in war is no better than its claims in peace. Sixty-one Zeppelins were assigned to the German fleet during the war. Seventeen, with their crews, were destroyed by the enemy; twenty-eight were lost by accidents; six had to be put out of service as useless; ten survived. Day after day the airship commander reported to the admiral that the weather would not permit them to ascend, and the information they brought in before, and the one report received during the Jutland engagement, were misleading and unreliable. Alike on land and sea their military failure was complete.

The American experience with airships has not been a happy one. The *Roma* in 1922 crashed to the earth in flames—death roll thirty-four, injured eleven. The *Shenandoah* was wrecked in 1925—death roll fourteen. The *Los Angeles*, still surviving, is limited by treaty to use in peace.

The Airplane.—"Neon" believes that since 1914 the airplane has had some opportunity to show what it can do in war and peace. From 1914 to 1919 the most highly skilled and completely equipped industrial nations of the world, under the merciless lash of war, competed in research, experiment, construction and flying of airplanes. Probably more was spent on flying planes in those five years than on the development of steam transport on land and sea during its first fifty years. The internal combustion engine which makes the modern automobile possible, and which is the very soul of the airplane, has been improved continuously for thirty years. It is safe, the author believes, to say that in all vital respects it has reached the limit of perfection. Modifications in size, shape or design of wings, and so on, may be made *but the airplane is its engine*, and there is no real scope for generally

effective improvement in performance. Mere increases in size, weight, or power, and constant multiplication and alteration of types are symptomatic that the efficiency limit has been practically attained. There is a certain unalterable balance between the desirable characteristics of airplanes, and usually super-performance in one essential characteristic is gained at the expense of others. The British Air Ministry are quoted, that "the commercial airplane has emerged from its experimental stage." Sir Alan Cobham, until the meteoric advent of Colonel Lindbergh, admittedly the most experienced and successful airman in the world, testifies of his Australian flight—" . . . . from a mechanical point of view the airplane was as near perfect as any form of transport could be." Colonel Lindbergh, whose devotion to his plane includes it in "we," has uttered no criticism of its performance on the trackless road to Paris.

The World War ended, every important nation in Europe began and to this day continues to subsidize air transport. There, and generally in the United States, no airplane goes on a commercial errand without being helped by a subsidy either open or concealed. The expense of the U. S. Air Mail Service for the year ending June 30, 1926, was $2,944,648. The total receipts for the same period were $980,271. After fourteen years of the most exhaustive research and intensive striving for efficiency to justify the commercial use of the airplane, it still costs approximately as much to carry a *pound* of freight one mile in an airplane, as to carry a *long ton of 2,240 pounds* one mile in a railroad train. With all the encouragement given and the money lavished upon commercial aviation it fails to show any real progress. Apart from discomfort, danger and dependence upon weather, the airplane can never be seriously regarded for commercial travel or transport, for the reason that four-fifths of the total power installed is required to maintain the plane and its load in the air against gravity, only one-fifth remaining to push or pull the load along. The tractive effort necessary to pull a plane through the air is over ten times as great as that required per pound of gross weight by freight train. Commercial aviation is inherently unable to operate on a profit-making basis. The newest passenger planes from London to Paris can carry for each horse-power but *three pounds* of paying load. A railway locomotive can draw a paying load of approximately *three tons* per horsepower, with nearly perfect safety, and with passengers in comfort, at a speed that bears comparison with that of commercial airplanes in still air. Without night travel long-distance railway journeys would be more costly, less convenient, and the time taken would be doubled. Airplanes are "half-timers," and must remain so even with the tremendous outlay for lighting of routes, and of *intended* landing places.

Some interesting comparisons are made: In the flight late last year of four British planes from Cairo to the Cape and from the Cape to London, eight persons were conveyed 14,000 miles in 114 days, an average speed of five miles per hour, a little faster than a cavalry horse can walk. The machines kept to a scheduled time-table. The cost was tremendous. Two tramp steamers with the same horse power, at trifling cost could have conveyed 4,600 tons of cargo a similar distance *in half the time.* The rapidity of aërial transport is illusory except for short or relay flights. The Round-the-World flight of American Army aviators covered about twenty thousand miles and consumed nearly six months. Meantime 87,000 miles of steaming was done by U. S. naval vessels, alone, to make the flight a success as against 26,103 miles flown by the airplanes. One recalls that Phileas Fogg, fictitiously, and Nellie Bly, actually, beat that time before an airplane flew. Franco, the Spanish aviator, flew 3,649 miles from Spain to Brazil. It was the season of the constant north-east trade wind which from Cape Verde Island to Fernando Noronha (1,447 miles) favored him thirty miles per hour. The air current did 442 miles and 1,035 were covered by engine power and fuel consumed. With the same wind and the amount of fuel his plane could carry, he could not have crossed the Atlantic in the opposite direction. Had a large comfortable passenger liner, sailing as slowly as fifteen knots, left the same port in Spain, at the same time, she would have arrived at Rio with Major Franco. Everyone who has read the newspapers is aware of the favoring wind that helped *The Spirit of St. Louis* in her never-to-be-forgotten flight from New York to Paris. "Neon" states that generally all cases of transoceanic flights by any kind of aircraft have owed their success

to favoring air currents. Plans in detail were submitted to the Imperial Conference, which met in London last October, for providing man-made islands of concrete as links in an All-Red air route for the Empire. These artificial landing fields were to be anchored at convenient points in the seven seas, provided with hotels, lighthouses, power plants, duly protected by aircraft, anti-aircraft and torpedoes, with possibly a few obsolete craft of a once sea-ruling navy. The record is incomplete in not stating whether all the assembled premiers laughed or only part of them.

Some day, "We may," says "Neon," "discover and be able to employ an entirely new source of motive energy, an energy which implies little or no weight, but gravity will still exercise its unerring and relentless force and the winds—the currents of the air—will always govern the operation of aircraft." Bad weather will continue to be unaffected by the activities of meteorologists, and the Law of Gravity defies research. They are now as they were in the Beginning, and ever shall be, World without End.

"Neon" assays a slight trace of British humor. The Air Minister points out that the use of airplanes alone made possible the rescue of the leader of the Spanish flight to Manila, who in passing over Transjordania was lost, and that twenty-four airplanes scoured the desert, covering some 16,000 square miles, adding that "nothing but the search of airplanes could have saved this man's life." "Neon" comes grimly back with: "Nothing but an airplane would be likely to land itself in a predicament calling for such a great and friendly—if costly—effort on its behalf."

In the World War the airplane was a new weapon, and history repeated itself in acclaiming the new weapon as in other days it had hailed Greek fire, the catapult, the arquebus and long-bow, gun-powder, artillery, breechloaders and automatics. Slings were probably urged for Saul's army after David brought Goliath down "out of control." Airplanes were used for reconnaissance, photography, spotting, for air combats and bombing. "Neon" believes them an unreliable weapon, ineffective and unprofitable—achieving so little, costing so much. He states that it can be demonstrated:

1. That aërial reconnaissance is unreliable.
2. That aërial combats in themselves have no influence upon the advance of the enemy or the ultimate result of the war.
3. That bombing is inaccurate and therefore can only be indiscriminate and against non-military population (including women and children), offending civilized opinion and international feeling if not international law.
4. That such bombing is inherently expensive, is utterly ineffective so far as winning the war is concerned, and that air operations can only be carried on at enormous and disproportionate cost.

Taking these claims categorically, the author's views may be condensed about as follows:

Accurate observation and regular reconnaissance are most desirable in war, but warfare is not confined to fine days. Airplanes cannot go out in bad weather, observation may be difficult even in fair flying weather, and on foggy, rainy, misty days and at night aircraft can see nothing. They cannot see through woods or camouflage, or into cities, nor get identifications, nor communicate with people of the country to check and verify the truth of what their observers may think they have seen. They can only give positive information of movements observed. They cannot bring in complete negative information. On March 21, 1918, when the Germans pushed back the British Fifth Army towards Amiens the prevailing weather was "very hazy and aërial observation almost impossible." It was a day of thick white mist. The airmen neither warned of that great attack nor could help the army when the attack began. Dazed by their own impotence they could only "watch" it. What, on that day of disaster, would have been the value in the line of all the men immobilized by the air service and its supply service? Weather stops the air service but does not stop the war. Speed, an inherent necessity for flight, is a grave disadvantage for observation from the air. Height in flying to avoid fire adds to the difficulties in reconnaissance. Reconnaissance at sea by a plane out of sight of land or its carrier, which therefore cannot determine its position, can report nothing of importance. If near its carrier its reconnaissance can be better done by surface craft. Spotting, the observation of long range fire, is considered as an important function of an airplane, but weather may prevent it from leaving the ground or its carrier; airplanes dashing about at a hundred miles an hour, dodging anti-aircraft fire and looking out for hostile planes cannot

give to spotting that calmness and deliberateness which secures the precise observation necessary for good gunnery. If many guns are firing rapidly the air observer cannot say from which guns certain shots were fired. Airplane observation came in with trench warfare and generally went out when war of movement was resumed. Even the numerous airplane photographs of muddy trenches do not seem to have hastened the Armistice. The difficulty in recognizing what the observer sees from the air is well illustrated by the case of the British pilot who mistook the big red cross, laid out in the open to protect a hospital at Calais, for an iron cross meaning that the Germans were in occupation of Ostend, over which he thought he was flying. The classic instance is cited where the American First Division Headquarters were repeatedly bombed one June day in 1918, by a British aviator who later was brought down by a French plane and turned out to be an American in the British service.

The real battle, the battle which determines the final result, is on the ground or on the sea. Air combats in themselves are irrelevant to the issue and have no influence upon the advance of the armies or the retention of captured ground. Air combats between opposing planes or squadrons achieve nothing but the destruction of life and airplanes. Air combats were episodes or diversions for those who watched them from the ground. The enemy were never so victorious in the air as on that eighth of August, 1918, which according to their own accounts was the "black day of the German army in the World War." The air battle lost by the Allies that day, when with slight losses the enemy brought down eighty-three of our planes behind his lines, signified nothing in the final fortunes of the day. With all the undeniable heroism, the knightly sacrifice, the Homeric fighting above the lines, the hideous casualty list, and the sacrifice of wealth and man-power devoted to the air arm, the actual contribution of air fighting to the victory is shadowy and elusive when you try to define it. The aces fought and fell but there was no panic when they fell; no ground gained or held as a result of their sacrifice. Their survival or their passing did not effect the final decision.

Aërial bombing is from its nature absurdly inaccurate and therefore indiscriminate. Knowing its inaccuracy one cannot acquit the advocates of bombing of *intending* war on helpless non-combatants, including woman and children. The non-combatants are expected to coerce the combatants into surrender, but it will never work that way with the women of any race worth saving. The band still plays the *Marseillaise* or *God Save the King*, and the soldiers of the race are but nerved to undying effort.

All the limitations that apply to air reconnaissance obtain in greater degree in finding and recognizing the target to be bombed. Foggy or misty weather, the speed of the plane, the height to which it is forced, inevitably make the bombing indiscriminate. There is abundant evidence that bombers flew as high as they could—they were forced to do so if they would survive. Sighting in bombing, says "Neon," is an attempt to navigate a bomb to the point in space which the particular conditions at the moment determine as the one and only spot from which a hit can be obtained. The "spot" depends upon the altitude of the plane, its exact speed through space, and on its direction and angle of flight. These factors introduce wind at that particular height and locality, which no mechanical sight in the world can do more than help guess. It is a question of navigation to a three-dimensional spot, not a question of aiming. When one considers that ships may be steaming into the wind, or with it, or may be across it, and the speed of both wind and ship may be variable, or the ship be affected by currents and tides —bombing does not look to a layman like an exact science especially when the anti-aircraft guns are firing. The *Goeben*, the German warship that was turned over to the Turks, was ashore in 1918 not far from the Dardanelles and was repeatedly bombed by the British Air Force. Two hundred and seventy flights were made and fifteen tons of bombs were dropped. One bomb is believed to have hit the cruiser.

The Germans crossed the Channel many times to drop bombs in England, but they took no hostile note of the many ships crossing the Channel from shore to shore laden with troops, munitions and coal. Only the difficulty of hitting them saved this vital cross-Channel traffic. "Neon" cites other attractive targets—the locks and canals of Zeebrugge being the heart of the German submarine warfare, against which no bombing raids were ever carried out, and one wonders why?

Air war is expensive. A viaduct, name not given, which cost only £14,000 to repair cost the Germans £80,000 to destroy. Bombing a battleship at sea costs enormously. One modern aircraft carrier, the *Saratoga* or *Lexington,* costs about $40,000,000 and carries seventy-two planes, costing an additional $1,500,000; thirty-six bombers, carrying each one bomb, and thirty-six pursuit planes to protect the bombing planes. Under war conditions, in average weather, with anti-aircraft guns on the battleship and freedom of maneuver, the probability of one hit would be doubtful, two would be remote. Allowing, for the sake of argument, the luck of one hit out of the possible thirty-six in action, no matter what harm were done the ship, the effort would have cost $45,000,000 in capital expenditure on craft alone. When the planes go out and drop their bombs they are done. They can never go back and get more during that action from a carrier chased by destroyers and fast cruisers. This huge effort is directed against one ship only, and meanwhile the ships of the line are proceeding with the sea battle proper.

When lack of replacements forced Sir Douglas Haig, in 1918, to change the organization and tactics of his infantry, 405,000 workers at home were used in turning out ninety planes per day. For every plane in service eighty-four men were retained on the ground! Probably two million of men were employed in the manufacture and operation of the planes the British had in October, 1918. Even now in peace the British Air Ministry employs fifty men for every plane in service! In the United States Air Corps, 80 per cent of the personnel are ground men and establishments. The cost of training a pilot in the Royal Air Force is given as £2,000. With 2,163 pilots in service in 1925, the cost for their training had been £4,326,000 or about $20,000,000. Planes in war went at the rate of 80 or 90 per cent a month according to "Neon." In the British Air Force during the year ending June 30, 1926, 262 planes were written off as a result of "crashing." Such figures could be almost indefinitely quoted from "Neon," but why do it—for surely no one doubts the cost of aviation. Since April, 1919, while still drawing on their war stocks, Great Britain has expended nearly £159,000,000 (about $795,000,000) through its Air Ministry alone, yet now has but one plane for every thirty-six it possessed at that date.

The Defense of London.—A brief consideration of the opinions of British air authorities as to the defense of London is of interest to Americans for it would be applicable to our own coast cities if they could be reached by hostile bombers. There appears much variation in the opinions of airmen—in fact, they are seldom unanimous except in their enthusiasm. This was true of the hearings by the Morrow Board, and "Neon" finds the same characteristic situation in Britain. Air enthusiasts *without* responsibility believe that the only way London can escape "devastation and utter ruin from the air" in a next war that "can only result in unprecedented horror and misery, and probably in the destruction of the civilized world" is by having an Air Force "supreme in the air." Other air enthusiasts but *with* responsibility, such as Air Chief Marshal Sir Hugh Trenchard, agree that an Air Force is impotent to defend the country against air raids. Replying to interpellations in the Parliament the Air Minister appears to be in grave doubt as to the methods and means by which air power can be applied in war, but is quite confident as to the value of aircraft for commercial purposes. Sir Alan Cobham in no way intimate with agencies of war, but a great trade pilot, does not consider aëriel transport a paying proposition and states, "commercial success is not the issue." In his opinion the *raison d'être* of long distance flights and all that is implied in the development of aërial routes is the defense and safety of the Empire. The Air Minister for a fighting service is lukewarm and uncertain as to the military rôle of the Air Force but enthusiastic and confident as to the commercial future. The greatest long distance commercial pilot (Cobham), convinced of the futility of planes for *commercial* undertakings, is confident of their *military* value.

General Trenchard says the airplane was a "shockingly bad weapon of defense against an airplane." The British Air Staff in France in 1916 agreed that it was impossible to prevent hostile planes from crossing the lines, the sky being "too large to defend." "No matter how many millions are expended on air service, how many pilots are available and fit to fly, and how many single fighters or bombers are on charge," says

"Neon," "immunity from bombing attacks cannot be ensured by this means, 'the space of heaven cannot be closed.'" Apparently the only way to keep from being bombed is to have your men off bombing someone else.

Again quoting General Trenchard: "Although it is necessary to have some defense in order to maintain the morale of our people, it is far more necessary to lower the morale of the enemy people, for nothing else can end the war." There you have the intent at the declaration of war to penetrate into the enemy's country for an attack on his centers of population, his mobilization zones, his defenseless non-combatants, the reign of poison gas, bacteria, and baby-killing. If the policy of "frightfulness" is adopted by the nation, "Neon" believes it will logically object to "frightfulness" being the prerogative of one service only. The haphazard achievements of air power can be easily surpassed in terror by an army and navy to whom such practices have hitherto been alien. By such token the Royal Navy, a truly mobile force, should, on the outbreak of war, proceed to subject every undefended town and village on the enemy coast to a hail of high explosive, incendiary and poison shell.

As to the efficiency of the air power for this kind of warfare, "Neon" points out that during 1918, 483 hostile planes were directed on Paris, of which only thirty-seven reached Paris, and thirteen of these thirty-seven never returned to their own lines. They were brought down by anti-aircraft defenses. During four years of war there were fifty-one airship and fifty-two airplane attacks over England. London was bombarded twelve times by airships, and nineteen times by airplanes. The total thus killed in Great Britain during the whole period was 1,413. In four years of peace, 1922-25, inclusive, the number killed in street accidents in England was 11,346.

No anti-aircraft artillery was in existence before the war, and it had to be improvised and developed from such materials as was available. Notwithstanding its crudeness, one-fifth of the airplanes destroyed by France, Italy and Germany were brought down by anti-aircraft fire. While the mission of this arm is to destroy enemy aircraft, its effectiveness is not to be judged by the number of enemy planes that it may bring down, but rather by its success in limiting and hindering enemy aërial activities within range. Its efficiency above the infliction of casualties will be measured by its ability to disturb the aviator, to force him to change his course and altitude, and to fly so high that he will be beyond the range of good visibility.

No nation, however powerful its air forces and anti-aircraft defense, can hope to safeguard absolutely its homeland from the raids of the enemy whose air strength is not negligible. There can never be in the air that sure line of defense for an island nation which a powerful fleet constitutes at sea.

Apart from the dictates of humanity, it is the fallacy of force misused that condemns attacks on non-combatants. War is decided when the armed forces of one side are destroyed or paralyzed by the other. The first and most fundamental of all military maxims is to concentrate on securing the ultimate victory by such destruction or paralysis. No country's resources are limitless. If you expend your money and your effort on planes—the costliest of munitions—for bombing civilians you weaken to that extent the pressure you can bring upon the enemy's armed forces.

This book should be read by all those charged with or interested in our policy of national defense. It certainly should be studied by every national legislator. It is most convincing as to the excess to which the propaganda for aviation has led us. Air service in proper proportion will unquestionably form a part of every army and navy. That it will continue to be an auxiliary arm for both army and navy, but an often unreliable one due to causes which man cannot control, cannot be doubted. That it will ever replace armies or navies, is a neurotic dream. Cavalry, infantry and artillery will still win wars on land; battleships and their naval auxiliaries will still rule the sea. No matter how high or how far he may fly the aviator in war to be fed, clothed, rested, and paid must come back to the shelter of his army or navy. He can neither take or hold hostile soil, and that is how wars are won on land.

As to civil aviation it is as Mr. Pollen says: "Speed may at certain conjunctures be of vital importance. This possibility may justify a national subsidy to keep civil aviation in being. But if the nation chooses to keep it going it should be for reasons that can be clearly stated. We should not be fooled into thinking that in time it will pay."

The American Navy *in* Hawaii

By ALBERT PIERCE TAYLOR

Librarian, Archives of Hawaii, and author of "Under Hawaiian Skies."

(Editor's Note: See Secretary's Notes this issue)

EARLY NINETEENTH CENTURY

FOR more than a century adventure, romance, tragedy, pageantry, bravery, diplomacy and destiny have figured conspicuously in the visits of American warships to Hawaiian waters. The War of 1812, singularly, was the cause for many outstanding incidents which brought Hawaii into the limelight of American patriotism, and focused attention at Washington upon the mid-Pacific archipelago, the destiny of which was eventually to be dominated by the then youthful American republic.

Between 1812 and 1814 three incidents stand out in Hawaiian history, which reveal close contact with the American nation, two of them particularly relating to the American Navy.

Any record of the United States Navy in the Hawaiian Islands could not reasonably be looked for prior to July 4, 1776, and for years afterward, for it was not until 1778 that Captain James Cook, Royal Navy, discovered the group while voyaging northward from Tahiti to the mystical "Northwest Passage."

While but a few notes are found regarding American shipping interests in Hawaii in the early years of the nineteenth century, some must have existed as we find that one Humehume, or George Tamoree, a son of Kaumualii, king of Kauai Island, was sent to the United States for education early enough to have enlisted for service in the United States Navy during the War of 1812. He was, in fact, the crown prince of the little island which stood out against the domination of Kamehameha I, after the latter's consolidation of the islands of Hawaii, Maui, Molokai and Oahu into a kingdom, following the decisive battle of the Nuuanu, above Honolulu, in April, 1795.

It is also significant that on July 4, 1814, the first celebration of the Fourth of July in the city of Honolulu was held by Americans. Kamehameha I, aged monarch, presided at a typically staged New England observance of the "glorious Fourth," in a shady spot which was upon the site of the present Roman Catholic Cathedral, with the captains of three American ships as masters of ceremony. There were moored in the peaceful waters of the harbor three American merchant ships engaged in the northwest trade, the *Isabella,* commanded by Captain Davis; the *O. Kane,* commanded by Captain Jona. Winship, and the *Albatross,* commanded by Captain Nathan Winship. Captain Alexander Adams, a former British sailor, who carried the Duke of Wellington ashore from a British frigate during the Peninsular War, was associated with the latter vessel. Strange enough, two years later, in 1816, the *Albatross,* purchased by Kamehameha I, was under full sail for China, flying the Hawaiian flag, the first time in its young history that it was being carried to foreign ports. In that day the king was the only pilot in Honolulu harbor. His great war canoes, each seventy-five feet in length, manned by 200 brawny arms, had previously scoured the waters around the islands, the original navy in the mid-Pacific. In those adventurous days the royal pilot would stand upon the platform between doubled canoes, waving his spear so that the crews would paddle in unison.

That Fourth of July celebration in 1814 was a remarkable observance, the king having provided an abundance of food, the three Yankee captains providing the oratory that, in earlier days, was a conspicuous part of America's natal day celebration.

In that same year there appeared off Honolulu harbor one day, a strange looking vessel, apparently a merchantman, but carrying cannons and flying the American flag.

There was an air of the navy about her, and she was unquestionably in need of repairs; few men were upon her decks. She was the first American warship to arrive in Hawaiian waters and yet but a few weeks before she had been a British auxiliary man-of-war. She was captured in the South Seas when Commodore Porter made his spectacular cruise in those waters in the *Essex* and captured several vessels which were manned by officers and men from his own ship.* The *Sir Andrew Hammond,* prize of war, was in command of Lieutenant John M. Gamble, Marine Corps, a youthful officer, but one who added glory to the honor tablets of the American Navy. A year before, on the Island of James, in the Galapagos Islands, he had faced Acting Lieutenant John S. Cowan, of the Navy, in a duel. They used pistols. Gamble survived. The code of the duel had been observed. It was lamentable but it was the social order of that period.

At one of the lonely islands in the South Seas a few months later, Porter having sailed for the South American coast where eventually he was to engage the British in brilliant battle, the crew of Gamble's ship mutinied and the young prize master, though wounded, put down the mutiny, this incident bringing to the surface the sterling qualities of a splendid officer. The *Sir Andrew Hammond* finally sailed northward to the then Sandwich Islands and he recruited his crew at Honolulu from among Hawaiians. As this event took place early in America's history, the Navy records must honor those simple men of Hawaii who enlisted for war service under the Stars and Stripes. But not for long did they serve. The *Sir Andrew Hammond* sailed for South America but a British frigate falling in with her before she had got clear of Hawaiian waters, she was recaptured.

VALUE OF PEARL HARBOR LONG RECOGNIZED

Where a century ago Hawaiian outrigger canoes drifted over the still waters of Pearl Harbor in the peaceful pursuit of the fishermen's calling, and occasionally double war canoes sped to the powerful paddling of bronze-hued warriors, superdreadnaughts, armored cruisers and the fleets of lesser craft of the American Navy may now steam from the open sea off the leeward coast of Oahu, through a wide, deep and almost straight channel, to the quiet waters of the inner lochs which spread out like a large *fleur-de-lis.*

Ever since wooden-walled warships of the Old Navy, with their great clouds of canvas, first called at Honolulu, American naval officers have declared that Pearl Harbor presented a natural naval base, upon the shores of whose lochs could be established coaling and repairing stations which would be invaluable to any power fortunate enough to gain possession. Admirals, commodores, captains and junior officers never deviated from this recommendation. In the days of sailing warships the actualities of dredging did not enter into their calculations as in these later days of deep-draught fighting machines, and only within the last quarter of a century did the question of dredging become a serious problem. Although Pearl Harbor was recognized as a natural site for a naval base, yet the entrance from the sea over the ragged coral bar and up the tortuous channel presented grave difficulties to successful navigation. These have been solved in part but new contracts are being entered into for additional dredging to widen and deepen the channel and the lochs, for the removal of obstructions to navigation, and to provide adequate anchorages. In the center of the lochs lies Ford's Island, named for Dr. Seth Porter Ford, an original owner back in the fifties, and upon which is located Luke Field, the aviation bases of the Navy and Army.

Far-sighted officers were listed on the rolls of the Navy eighty, ninety and a hundred years ago, men with prophetic minds, who closely observed geographical advantages on their cruises as well as diplomatic ones. Even so, it seems strange that there should have been such unanimity of opinion with regard to Pearl Harbor, for all agreed that the base, if ever established and developed, should come into being under the American flag. When the American centennial was celebrated, the United States government entered into a treaty of reciprocity with the Kingdom of Hawaii, whereby the Polynesian monarch, King Kalakaua, eventually ceded to the former the great Pearl Harbor basins for use as a coaling base in exchange for the privilege of shipping Hawaiian raw sugars into the United

* This Porter was the father of Admiral David Dixon Porter, the first President of the U. S. Naval Institute.

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States free of duty. But none dreamed that these islands would become a full-fledged territory of the United States and that Pearl Harbor a part of the new and powerful insular military and naval outpost of America.

That the United States ultimately secured this base in the Pacific was the result of diplomatic vigilance on the part of the officials of the State, Navy, and War Departments, for all three correlated their interests almost from the moment the missionaries sailed from Boston harbor for Hawaii that October day in 1819. The islands were little known then in American diplomacy but already figured largely upon the records of Downing Street.

THE MISSIONARIES ARRIVE—1820

With the advent of the missionaries in 1820 and the American whalers in the following year, interests of the United States were thereby established which were destined to take first place. From that time on the United States Navy figures in events with constantly increasing frequency and importance, as the character of the then uncivilized islands rose to that of a civilized nation, with high diplomatic and consular officers accredited from what is now "our country."

American residents were as keen for the preservation of their interests in the islands as were the British and both elements strove for mastery. For one reason or another American warships always seemed to be riding at anchor off Waikiki or moored in Navy Row in Honolulu harbor when a British warship was in Hawaiian waters and *vice versa*. American interests over-balanced those of the British and of the French, whose great frigates, often with open ports and guns protruding and ready for the match, appeared in the harbor with demands upon the king which were to be answered immediately or take the consequences of gunfire.

As the Constitution follows the flag, so their flag has followed pioneering Americans to distant lands and seas. As soon as the interests of America appeared to be jeopardized in the Sandwich Islands, Yankee war vessels, unostentatiously and without prior notice, dropped their anchors in various island harbors and roadsteads, but seldom did their commanders have need to loosen the lashings upon the guns, or remove the tompions, except to fire the customary salutes. The Yankee missionaries were on guard for America, but little has ever been revealed of what they may have written "home" concerning the need of American warships in these waters.

The arrival at Honolulu in 1825 of the British frigate *Blonde*, commanded by Captain the Honorable Lord Byron, a cousin of the poet, bringing back from London the bodies of King Kamehameha II and Queen Kamehamalu, who had died in the English capital, offered a new and serious wedge against pioneering American interests. Lord Byron came with secret instructions concerning the future policy of the little island kingdom, for the youthful successor of Kamehameha II was to be proclaimed king, under a regency which is generally fraught with disquietude. Lord Byron had been preceded by the first British consul, Captain Richard Charlton, who was to prove a thorn in the side of the Hawaiian government for twenty years. Byron was present at the council of chiefs when Kamehameha III was proclaimed the successor with Queen Kaahumanu, wife of Kamehameha I, as regent. He had instructions and advice from the rulers of England to give the chiefs. It was the first wedge.

Within a year the first actual American warship, the *Dolphin*, arrived, and toward the close of the year, the *Peacock*, the latter commanded by Captain Thomas ap Catesby Jones, who was empowered to negotiate a treaty of commerce and friendship with the island government. Back in the forties of the last century, Robert Crichton Wyllie, minister of Foreign Relations of the Hawaiian Kingdom, a Scotchman of high intellectual and diplomatic attainments, endeavored to indicate the rising importance of Hawaii to the United States. In one of his reports appears a complete list of all warships that had visited Hawaii. Prior to that time, while some of the government ships visiting the islands carried guns and were often commanded by naval officers, they were principally vessels of discovery and exploration, perhaps carrying groups of scientists. Following 1820, the first warship of national importance to visit Hawaii, then, was the *Blonde*. During the following twenty years (1826-1846), American warships visiting Hawaiian waters included:

1826—January 14, *Dolphin.*
1826—October 11, *Peacock.*
1829—October 13, *Vincennes.*
1832—July 22, *Potomac.*
1836—September 6, *Enterprise.*
1836—September 7, *Peacock.*
1839—October 10, *Columbia.*
1839—October 10, *John Adams.*
1840—September 19, *Flying Fish.*
1840—September 24, *Vincennes.*
1840—September 30, *Peacock.*
1840—October 7, *Porpoise.*
1841—March 8, *Vincennes.*
1841—March 24, *Porpoise.*
1841—April 6, *St. Louis.*
1841—June 14, *Flying Fish.*
1841—June 16, *Peacock.*
1841—October 9, *Yorktown.*
1841—November 17, *Vincennes.*
1841—November 17, *Porpoise.*
1841—November 17, *Flying Fish.*
1841—November 18, *Oregon.*
1842—December 4, *United States.*
1843—February 13, *Boston.*
1843—July 6, *Constellation.*
1843—August 3, *United States.*
1843—September 4, *Cyane.*
1845—November 16, *Constitution.*
1846—March, *Cyane.*

The visit of the *Dolphin* in the spring of 1826, which resulted in a court-martial for Lieutenant John Percival, her commander, was unfortunate when linked with the need for developing sympathetic interest among the Hawaiians for the United States. Historians are not all agreed as to some of the untoward incidents that arose from this visit. There were serious clashes between Percival and the missionaries, recriminations and heated charges, and these went so far as to impute to Percival failure to restrain his men from lustful practices ashore. It was recommended that Percival be court-martialed but some reports of non-historians are that he was never brought before a court.

A non-reform faction grew up, headed by Captain Charlton, who immediately began to prod the government, keeping it in "hot water" not infrequently, until he was finally compelled to retire, and on returning disgruntled to England, his own government repudiated him and failed to recognize his policies and did not reappoint him. He assailed the character of the missionaries and the latter challenged investigation, but at a public meeting presided over by Captain Catesby Jones, those upon whom devolved the duty of entering charges with sustaining evidence, refused to do so. Captain Jones settled much maritime difficulty and concluded the first commercial treaty between the government and any foreign power; and to a protest by Mr. Charlton, that the islanders had no powers to make treaties, replied that the latter's commission as British consul recognized Hawaiian independence.

The treaty negotiated by Captain Jones, while signed and sealed, was never ratified at Washington, but its terms were always lived up to by the American government. Captain Jones also settled large claims which merchants, traders and masters of vessels laid against the island government, payment being made with sandalwood, but within a few years the sandalwood, the real commodity value in vogue, had been stripped from the mountains, leaving them bare.

John Quincy Adams Interested

Captain William Bolton Finch, commanding the U.S.S. *Vincennes,* was in Hawaiian waters in 1829 and brought letters from the Secretary of the Navy filled with advice to the king and chiefs, and the captain had many interviews with them on the subject of their internal affairs, even to religion. Samuel L. Southard, Secretary of the Navy, under date of January 20, 1829, sent by Captain Finch an engrossed letter, which is on file in the Archives of Hawaii, embellished with many flourishes of the pen, addressed to "Kamehameha 3rd, King of the Sandwich Islands." He added:

> Captain Finch also bears to you from the President of the United States certain small tokens of regard for yourself and the chiefs who are near to you, and is commanded to express for your advancement in prosperity and in the arts of civilized life, and for the cultivation of harmony and good will between your Nation and the people of the United States. He has heard with admiration and interest of the rapid progress which has been made by your people in acquiring a knowledge of letters and of the True Religion —the Religion of the Christian's Bible. These are the best and the only means, by which the prosperity and happiness of Nations can be advanced and continued, and the President and all men everywhere, who wish well to yourself and your people, earnestly hope that you will continue to cultivate them, and to protect and encourage those by whom they are brought to you.
>
> The President also anxiously hopes that peace

and kindness and justice will prevail between your people and those Citizens of the United States who visit your Islands, and that the regulations of your Government will be such as to enforce them upon all. Our Citizens who violate your laws, or interfere with your regulations, violate at the same time their duty to their own Government and Country, and merit censure and punishment. We have heard with pain that this has sometimes been the case, and we have sought to know and to punish those who are guilty.

Captain Finch is commanded diligently to enquire into the conduct of our Citizens whom he may find at the Islands, and as far as he has authority to ensure proper conduct and deportment from them. . . . . Among others he bespeaks your favor to those who have taken up their residence with you to promote the cause of Religion and learning, in your Islands. . . . . The Reverend Charles Samuel Stewart, who resided for a long time with you, has received the favor of his Government in an appointment to an office of Religion in our Navy, and will visit you in company with Captain Finch.

Noble words, those of the President of the United States. They included advice of a serious and beneficent nature and the Chief Magistrate depended upon a captain of the Navy to carry out his instructions, give advice, and be helpful to the young island nation.

A New Era—Commodore Downes

At an opportune time in 1832 Commodore John Downes, U. S. Navy, called at Honolulu in command of the frigate *Potomac*, then making a cruise around the world. She came from Manila, following a cruise to remote islands, in which her commander had put down piracy and made the American flag respected in the Malays; he had thoroughly chastised the natives at Quallah-Battoo.

Misunderstanding over religion had grown to serious proportions at Honolulu. Reverend Hiram Bingham, the first of the New England missionaries to set foot in Honolulu, was at the head of the Protestant mission. Christianity was in full flower and the Hawaiians were eager to build churches and school houses. Catholic fathers, attempting to land, were ordered away. Persisting in following the Catholic faith, men and women among the Hawaiians had been imprisoned and were required to build coral walls. It was upon such a condition that Commodore Downes happened. His visits to the royal palace and interviews with the young king, the latter usually attended by Bingham as interpreter, bore fruit, for he taught the king the virtue of tolerance to those of other faiths and the prisoners were released.

It was the opening of a new era. Downes describes the young king then as about "twenty years of age, middling size, and well made. . . . . He wore a full dress of the Windsor uniform, with two gold epaulets; a star on his left breast, cocked hat, and sword."

Commodore Downes, according to the narrative of the *Potomac's* cruise, found that a British magazine writer proposed that England take the Sandwich Islands, not on the grounds of right, but merely of expediency.

"But the British standard *(refers to flag)* is no longer the undisputed master of the sea," was the comment of J. N. Reynolds, the ship's writer who compiled Commodore Downes' papers into the book *The Voyage of the Frigate "Potomac" Around the World*. "Other nations have some claims, and some power, too, on the great highway of nations."

The writer, in his fruitful imagination, has already fortified Honoruru (it was so spelled then) as he thinks "it would be a good place from which to watch ours and the Russian trade in sandalwood, opium, turtle, furs, etc., to China, Mexico, and the northwest coast of America. England will find enough to do to take care of her interests in India, New Holland, Canada, etc., without stopping to worry her mind about planting new colonies in the Pacific." These were the first real seeds sown by the Navy toward acquiring a foothold in Hawaii.

It is of importance to note that Commodore Downes commented on the palace of the king; that it was small, but yet dignified, and of foreign construction; that in the hall, a good sight to him was a copy of the Declaration of Independence, framed and hanging upon the wall; that there were also the oil portraits of a Prussian king and of Field Marshal Blücher, the gift of the Teutonic ruler to Kamehameha III, who had sent the Prussian a beautiful Hawaiian feather cape. The latter is in a Berlin museum and the portraits are on the walls of the Archives of Hawaii.

Religious and Land Questions

The visit of the *John Adams* in 1839 was made notable by the action of Commodore Read, as umpire, in settling claims arising out of the case of the schooner *Clementine*,

in which was involved the imbroglio of the king's government over the Catholic question. The French consul championed the cause of the latter as also did the British consul, Charlton, because one of the fathers on board, a British subject, was ordered to remain on board and depart.

From this arose an incident in which the integrity of the American missionaries was attacked as being opposed to the introduction of another faith, and they were further charged with providing thoughts for the king and his advisers which would be detrimental to the other faith. The missionaries requested that the American commander decide whether or not they were guilty as charged and asked his intervention. The commodore, however, made it plain that his duty did not suggest his taking the position of judge, but before leaving his officers were permitted to give an expression of their opinion, and did so—favorable to the missionaries.

In this period, from 1825 to 1839, the native government, ruled almost absolutely by the king, his advisers being the council of chiefs, found itself facing the guns of foreign warships. Captain Belcher, in 1836, arrived in the British warship *Sulphur*. Intemperately, he took issue with the king over the question of the Catholic religion, and in a book which he published subsequently, expressed his opinions of the king, his advisers and the missionaries, and often strayed away from obvious facts.

Commodore Kennedy, arriving in the U.S.S. *Peacock*, September 7, 1836, held many conferences with the king and chiefs and gave advice as to land titles and claims of traders. All these subsequently recorded incidents were cogs in the development of the little kingdom until it became an important state, able to deal on a diplomatic basis and on an equality with the powers. The chiefs continued, however, to be tenacious of their rights on two points, which involved them in dispute after dispute with foreigners. The first was the ownership of land, which, according to their theory, also based on ancient custom, belonged to the king as the head of the nation, and could not be transferred without his consent, so that all foreign residents were but tenants at will. The second point was the right of the king to withhold permission to enter the kingdom from any foreigner who might be obnoxious to him.

Over these questions the French corvette *Bonite* arrived October 8, 1836, under command of Captain Le Vaillant. Lord Russell arrived later in command of the British frigate *Acteon*. After long conferences, coupled with threats, the latter negotiated a convention defining the right of British subjects to land, reside and build houses in the islands "with the king's consent." Some damages were collected, after which Lord Russell sailed for Tahiti.

In July, 1837, the British sloop-of-war *Sulphur*, commanded by Captain Belcher, and the French frigate *Venus*, commanded by Captain Du Petit Thouars, arrived at Honolulu, both in connection with the "Clementine" question, so called because it was a ship of that name which brought back from exile in California, two Catholic fathers, Fathers Bachelot and Short. In the course of an interview Captain Belcher so far forgot himself as to shake his fist in the face of the Kuhina Nui (Premier) and the High Chiefess Kinau, a daughter of Kamehameha I. Both naval officers finally admitted the king's right under the law of nations, but condemned his course and both made common attack upon the Reverend Hiram Bingham and his fellow American missionaries. The attitude of Captain Bruce of the British frigate *Imogene* was courteous.

This much has been introduced relative to visits of foreign naval ships and officers to give a basis of comparison. There is but one authenticated incident where an American naval officer acted toward the king, chiefs and chiefesses other than with courtesy and extreme consideration. All others have expressed deference for their rank and apparently made endeavors to place the Hawaiian *aliis* on a plane no lower than the nobility of civilized lands.

On July 9, 1839, the French sixty-gun frigate *L'Artemise*, making a world cruise, arrived in Honolulu in command of Captain La Place. Without much ado he issued a manifesto, which bristled with threats of gunfire and destruction if the demands were not complied with. He brought up the Catholic issue and demanded that the priests be permitted to land, to teach and to build churches. Notes were sent to the British and American consuls informing them that the city would be fired upon if the demands were not complied with and, adding to the American consul:

I do not, however, include in this class the individuals, who, although born, it is said, in the United States, form a part of the Protestant clergy of the chief of this group, direct his counsels, influence his conduct, and are the true authors of the insults offered to France. For me, they compose a part of the native population, and must undergo the unhappy consequence of war which they will have brought on this country.

The American missionaries inquired of their consul whether the government of the United States would protect their lives and property and received the reply that they would have such safety within the consular enclosure and under the American flag. War was averted, the payment of $20,000 in gold exacted for the fulfillment of the convention signed, and the ship sailed away. The gold was returned in another French warship in 1846, the seals intact.

The United States frigate *Columbia*, Commodore Read, and the *John Adams*, Captain Wyman, arrived in Honolulu on October 19, 1839, remaining a few weeks. The claims of Jules Dudoit and a Mr. French for damages on account of the delay in the sailing of the *Clementine* were adjusted by Commodore Read, as umpire, for $3,000 paid to each of them. The commodore also was petitioned to appoint a court of inquiry to ascertain whether the American missionaries "had lost their citizenship," or had been the cause of persecutions. He declined because of want of time, but promised them the protection of the United States. Sixteen of the officers signed a testimonial in favor of the missionaries and ordered printed 1,000 copies of a pamphlet containing an account of the *L'Artemise* affair and a vindication of the American missionaries. The copies were sent broadcast over the United States.

At this time, the Declaration of Rights was drawn up at Lahaina—practically the first draft of a constitution for the islands—and signed on June 7, 1839. It afforded a real feeling of security for both foreigners and Hawaiians and within a year a constitution was granted to the people by Kamehameha III, followed by the organization of a legislative system of government. Hawaii entered a new era.

PACIFIC POLICY IN THE MAKING

In 1839 Commodore Charles Wilkes, U.S.N., commanding the United States Exploration Expedition, covering a period from 1838 to 1842, arrived in Hawaiian waters with his squadron, the *Vincennes*, flagship. Commodore Wilkes gave close scrutiny to the methods of government, resources, lineage of the chiefs, and wrote a very interesting series of books covering the entire voyage including the South Seas and the Northwest.

The commodore made an ascent of Mauna Loa, the "Burning Mountain" on the island of Hawaii, to determine its height and acquire a thorough knowledge of its characteristics. A large number of the officers and crew, carrying supplies and scientific instruments, aided by Hawaiians as actual bearers, were headed by Dr. G. P. Judd, an American medical missionary from New York state, attached to the mission at Honolulu. The ascent was made in December, 1839, and the expedition returned from the summit near Mokuaweoweo crater in the midst of snow, ice, blizzards, fearful cold. The air on the summit was extremely rare and caused acute illness. The work was accomplished under great difficulties and reflects credit upon Wilkes.

He had many interviews with the king and the premier, the High Chiefess Kekauluohi and other officials, and, like preceding ranking officers, gave advice to the sovereign. So far the naval officers had been ambassadors of good will and Wilkes added to this compendium.

It was in the decade of the 1840's that the first clash between British and American naval officers occurred, at a time when the Hawaiian nation had been stripped of her own government and was helpless at the feet of a conqueror—England. It was during this period that one American officer told the British commander in no uncertain terms that the former was independent, and used his pen to indicate that he was ready to back up his nation with his ship.

What the arrival of an American warship meant to the American residents in those days is told vividly in the diary of Captain William Paty, harbor master at Honolulu. When the latter saw the Stars and Stripes flying from the U.S.S. *Boston*, on Monday, February 13, 1843, the frigate *Carysfort* being then off port also, he loosed rein upon his patriotic emotions.

Americans and Hawaiians—king, chiefs and chiefesses—the missionaries and the merchants, were aghast at the arrogance of Lord George Paulet. His threats, his failure to meet the American representatives,

his undisguised enmity toward all things American because he regarded Americans as obstructionists to things British, backed up by the frowning guns showing tier upon tier on his frigate, caused consternation. Therefore, it is little wonder that Captain Paty should record this patriotic outburst in his diary on February 13:

> Hurra! Hurra! Hurra! for the Stars and Stripes! Hurra! for our gallant Navy! For our glorious Country! Oh, ye Yankees who live at home at ease, how little can you imagine the stirring thrill of joy and pride that agitates the bosom of your countryman who, roaming far away in foreign lands, and in the midst of trouble, difficulty and danger, hears the cry of Sail O! and the next moment he sees the Stars and Stripes floating over the brave hearts and powerful batteries of an American Ship of War. There may be readers who smile in derision at this, but I feel assured that they will not be from among the number of Americans who were resident in Honolulu in February, 1843.
>
> I believe this to be but a faint expression of the feelings of every truly American heart in this place when the U. S. sloop-of-war *Boston* was first seen round Diamond Head this way at about 2:00 P.M. The *Boston*, Commander Long, came to anchor off the harbor at about 5:00 P.M. She is from Canton via Tahiti.
>
> She brings news that the English war with China is ended, the Chinese to pay $21,000,000, and to open six ports to foreign trade!

On the day following the Americans went aboard to pay their respects. Captain Paty continued:

> During the day upwards of thirty of the most respectable residents (mostly Americans) have called to pay their respects to the *B.* and all have been received with the utmost cordialty and kindness. Praises are thickly showered on Commander Long, not only for the contrast between his conduct and that of Lord George, but for the real good humored and amiable disposition which he evidently possesses.

The following day Lord George notified the Hawaiian government that he would attack the town, filing a copy of the notice with Commander Long. The latter immediately informed all American residents that he would transform his warship into an asylum for any Americans who desired to take refuge there. Ship's boats of merchant vessels were requisitioned and sent to the Reynold's wharf to carry the people to the *Boston*. And so a U.S.S. *Boston* was on guard at Honolulu in 1843, as was also a U.S.S. *Boston* on guard at the same port half a century later, during the momentous and history-making February, 1893.

But on February 25, 1843, Lord George sent his armed bluejackets and marines ashore and, proceeding to the palace, lowered the Hawaiian flag and raised that of England, because the king, refusing to accede to the arrogant demands of the British commander, suddenly made a provisional cession of the islands to Queen Victoria. The king's decision was made in view of the fact that an embassy had been sent to London in the previous year, one member of which was Sir George Simpson of the Hudson Bay Company, always a friend of Hawaiian kings, and early favorable news was expected as a result of its action.

The Stars and Stripes appeared again in Honolulu when the gallant frigate *Constellation*, commanded by Commodore James Lawrence Kearney, arrived from China. On seeing the British flag flying over the islands, Kearney ascertained the facts and immediately lodged with Lord George a written protest "in the name of the United States of America," and further to indicate his feeling, invited the two princes, one of whom later became Kamehameha IV and the other Kamehameha V, to come aboard with Governor Kekuauaoa, of Oahu. He received them formally and with great official display and friendship, and to the amazement of the British on the *Carysfort*, riding at anchor near by, hoisted the Hawaiian flag. The flag, apparently, was made on the *Constellation*, as Paulet had ordered all others to be destroyed.

Paulet took umbrage and, to whip the Hawaiian government over the shoulders of Commodore Kearney, sent a letter to the king, demanding that he and his refrain from accepting any such invitation, otherwise he would take further action. For Kearney's act of kindness and justice, Kamehameha III presented Kearney with a beautiful Hawaiian feather cloak.

To commemorate this incident the Daughters and Sons of Hawaiian Warriors' Society staged a pageant aboard the *Constellation* at the Philadelphia Sesquicentennial Exposition, July 7, 1926, the members wearing the regalia copied from regal feather capes. The society presented the ship with an Hawaiian flag.

On July 31, 1843, the Restoration of Independence ceremony was held in Honolulu, the bluejackets and marines of the British and American warships were drawn up in formation to witness the lowering of the British flag and the hoisting again of the Hawaiian colors.

Gallant were the names of our warships those days—*Congress, Constellation, Cyane, United States, Constitution.* All these and many more called at Honolulu, particularly during the forties.

"OLD IRONSIDES" ARRIVES—THE CURTIS SURVEY—PEARL HARBOR

Kamehameha III was still on the throne in 1845 when the gallant old *Constitution* dropped anchor off Honolulu, November 16. In command was Captain John Percival, who commanded the *Dolphin* in 1826, and whose actions caused him to come in sharp conflict with the Hawaiians and missionaries. The *Polynesian,* Hawaii's weekly newspaper at the time, records the arrival of the warship almost in the same manner as the news of the arrival of a warship is recorded these days, giving a list of the officers, the brief account being followed by the poem "Old Ironsides," written by Holmes as a protest against the proposed breaking-up of the frigate.

Dr. G. P. Judd, the medical missionary who aided Wilkes in 1839-1840, was an important figure in the Hawaiian government in 1845. Troublous times had again risen, following the recognition of independence of Hawaii in 1843 by France, England and America. Secretly, he desired to obtain information as to how his government (Hawaiian) might be placed, at least, in a state of defense against foreign aggressions. It is certain he had no thought of what the United States might do, for he was an American, nor what Commodore Downes, in 1832, had stated:

> During a war, what interest would not these islands hold out to us, as sources of refreshment for our men-o'-war, while protecting our commerce and other interests in these seas?

That was a prophecy. Again it came when Dr. Judd, pondering an adequate method of defense, had conferences with Lieutenant L. W. Curtis, U. S. Marine Corps, attached to the *Constitution.* Curtis was ambitious and undertook, at Judd's request, a report upon a strategic site for fortifications for defense. He visited the fort erected in Honolulu in 1816 and regarded it, naturally, as worthless. The *Constitution* sailed for Mexico and from Mazatlan Curtis sent back, via the U.S.S. *Cyane,* his report, surveyed from the standpoint of the future.

By a singular coincidence, he decided that Pearl Harbor was the logical place for the defense of Honolulu!

In that day Honolulu was a mere straggling town, far from royal in aspect. Between Honolulu and Pearl Harbor was a barren stretch. Around the harbor were outcroppings of hard unyielding coral. It was bleak and unpromising and yet Lieutenant Curtis visualized the future with Pearl Harbor in the foreground of the picture.

How prophetic!

His dream has become a reality. Pearl Harbor is a strategic naval base. Around it are fortifications of the Army. Within the *fluer-de-lis* is the aviation base. The Island of Oahu has become a Malta. Honolulu is defended. Curtis' report has been developed into a sublime certainty of patriotism and a bulwark of defense for the entire nation of the United States. From the depths of an old camphor wood chest, that had rested for decades amid the dust in the attic of the former royal palace, this documentary proof of Curtis' prophetic vision was found and is now stored in the Archives of Hawaii. While Curtis was investigating, Kamehameha III was being entertained aboard the *Constitution.* Captain Percival desired to show him what a powerful vessel she was. His majesty was shown the guns and the powder rooms and was told the history of the remarkable naval duels in which she had humbled Britain's most formidable frigates. "Paixhans guns," says the *Polynesian,* "were mounted on the decks." The king wanted to see them fired and an exhibition was given with hollow shot fired upon the water. So the *Constitution* was revealed to the populace lining the shores, her sides all asmoke as though in battle, as she rode the peaceful waters of Hawaii.

It is strange that in Dr. Judd's book of his life and services in Hawaii, he makes no mention of the Curtis incident, but as the record had not been previously brought to light or made public, Dr. Judd perhaps believed that he should maintain secrecy to the end and never divulge this information. The report is dated at Mazatlan, February 21, 1846. It is long and one of the most interesting documents in the possession of the Archives. Curtis, in an accompanying letter, begged, in case the report was adopted, to be requested to supervise the construction of the defenses. His report

was prophetic and almost in detail, except that "Paixhans guns and Martello towers" were not installed; many of the recommendations of the report have been adopted around and in Pearl Harbor.

Dr. Judd wrote, on March 16, 1846, advising Lieutenant Curtis that he could not "reply in detail then, *owing to stress of activities with* the United States Commissioner who is hourly expected, and with the *French and English.*

"If we are to exist as a nation, we shall then turn our attention to the improvements you propose. At present the U. S. representative here is disposed to quarrel with us," which made him "unable to form an idea of what may be our relations hereafter."

"Allow me to assure you," continued Dr. Judd, "that in your short visit, you made a most favorable impression upon all the officers of the government with whom you formed an acquaintance, and I hope you will be able to visit us again before your final return home. This, I think, is probable, *as the contest with England will eventually bring ships of war more or less to this port.*" Curtis did not return, the fortifications were not built, the old fort was razed in 1857, and a commercial harbor front developed thereat, in Honolulu. Its guns, which faced those on American warships, are now buffer posts at street corners.

The U.S.S. *Congress,* arriving in 1846, brought new American officials to replace those who had become *persona non grata* to the Hawaiian government.

The Pacific Policy Enunciated

The United States policy towards Hawaii was forcibly and emphatically expressed in this decade, for on December 14, 1842, Daniel Webster, addressing Messrs. Haalilio and Richards, ambassadors from Hawaii, who had asked that the United States recognize the independence of Hawaii, wrote:

> The United States have regarded the existing authorities of the Sandwich Islands as a government suited to the condition of the people, and resting on their own choice, and the President is of the opinion that the interests of all nations require that the Government should not be interfered with by foreign powers. Of the vessels which visit the Islands, it is known that a great majority belong to the United States. The United States, therefore, are more interested in the fate of these Islands and of their government, than any other nation can be: this consideration induces the President to be quite willing to declare, as the sense of the Government of the United States, that the Government of the Sandwich Islands as a conquest, or for the purpose of colonization, that no power ought to seek any undue control over the existing government, or any exclusive privileges of preference in matters of commerce.

In 1849 the French frigate *La Poursuivante* arrived at Honolulu and under orders of Admiral de Tromelin, landed sailors, occupied and sacked the fort and departed with the king's yacht, which was never returned. After this incident Daniel Webster metaphorically pointed his finger at the powers and warned them to keep off and out of Hawaii, and in 1850 a treaty was ratified between that country and the United States. From that year on, foreign powers observed the admonition of Webster.

In the early fifties, organization of filibustering expeditions in San Francisco for the purpose of seizing the Hawaiian government and creating a republic, with hope of adding a new state to the Union, was revealed to the Hawaiian authorities. When the ship *Game Cock,* commanded by Sam Brannan, of San Francisco, arrived at Honolulu with filibusters, the authorities were awaiting them. The U.S.S. *Vandalia* was in port at this time, and Captain Gardner gave every facility possible to aid the island government in this crisis. Again, just toward the close of Kamehameha III's reign, the latter tired of difficulties, signed a paper giving a provisional cession of Hawaii to the United States. The sealed paper was entrusted to the *Vandalia's* commander to be opened in case of certain eventualities, particularly with reference to the French commissioner. When the latter heard from the British commissioner of what had been done, he withdrew his demands upon the government and another crisis was averted.

In the decade before the Civil War, the strategic value of Hawaii became clear to the United States, and the latter determined that no foreign power should obtain domination in its affairs. This constitutes one of the most conspicuous examples of consistent and persistent foreign policy in the history of the United States. Special commercial privileges were granted to Hawaii in exchange for exclusive material and military privileges secured to the United States. American influence, power, ownership were fostered. Many times annexation seemed at hand as early as 1854. When Congress

considered a Joint Resolution of Annexation in 1898, it was the fourth treaty of that nature negotiated on behalf of the government of the islands.

HAWAII NEUTRAL IN CIVIL WAR

When the Civil War began, Robert Crichton Wyllie, the Hawaiian Minister of Foreign Relations, decided upon neutrality as the basis of his government's contact with the United States government. This was declared equally with the United States and the Confederacy. The original drafts of this proclamation were recently received by the Archives of Hawaii from the estate of the late Prince Kalanianaole, delegate to Congress until 1922. In later years Wyllie was severely criticized for his action. There was discussed also at that time the question of installing a battery on the shore near the harbor channel, as a suggestion of "armed neutrality," but this, after criticism, was abandoned.

During the Civil War, the Confederate cruiser *Shenandoah,* styled by many in that conflict as the "pirate *Shenandoah,*" cruised in Pacific waters, and after the war was over, completed her career by burning whale ships at Ascension Island, among them being one flying the Hawaiian flag, and owned at Honolulu. She was the bark *Harvest* and a claim still reposes among the musty documents of the Joint Claims Commission, as the claim was originally directed at England as the power responsible for the *Shenandoah's* operations.

THE NAVY NOW AT HOME

In 1849 Honolulu was interested in the spectacle of U. S. troops parading the streets, while en route from the mainland or Atlantic coast, to Oregon for duty. The War Department established a quartermaster's office in Honolulu to purchase supplies for the Presidios at San Francisco and Monterey. An office of the Navy Department was maintained also, because of the numerous visits of warships. That these were worth while financially to the islands is evidenced by the fact that one warship disbursed $245,000 while stationed here.

The diplomatic, naval and congressional records of the United States contain thousands of pages concerning Hawaii. Beginning with President Pierce in 1852, presidents, secretaries of state, American commissioners and ministers to Hawaii, secretaries of war and generals of the Army, and successive congresses, continuously enunciated the principle that no other nation should be allowed to possess or dominate the affairs of the group. Naturally enough, the Navy Department was the flexible arm of the government, which made manifest the attitude of the American government through the stationing in island waters its ships of war. The Navy was always sailing a true course, free from entangling contacts or diplomatic mistakes. Always one of its ships seemed to be calling at Honolulu. Frequently one was on guard, though its outward mission seemed largely to provide wide decks for dancing and bands to play waltzes and polkas, and the officers to wear glittering uniforms to the receptions and balls at Iolani palace.

THE TRAGEDY OF THE LEVANT

Not long since, when the documents from the estate of Queen Liliuokalani were classified in the Archives of Hawaii, there were found a large number of old-time calling cards. These had been carefully treasured by the queen through all her vicissitudes, many having been received by her in the late fifties, when she was still Miss Lydia Makaeha, foster daughter of the High Chief Paki, and some in the early sixties when she was the wife of John O. Dominis, son of a ship captain of Boston, a daring and enterprising man of affairs in the Pacific from 1831 to 1846. The father had sailed from Honolulu and ship, captain and passengers were never heard of again. Other calling cards had been received when she was Princess Liliuokalani after her brother Kalakaua was elected king in 1874, and a still greater number, more modern, when she was queen, in 1891, after the death of Kalakaua.

The *Levant* tragedy was revealed when one of them, a tiny little slip of card, was found with the printed name of Commander Hunt, U.S.N., who commanded the ill-fated vessel. It bore in pencil upon the left-hand corner the cryptic letters, "PPC," indicative of the thought that when the *Levant* was about to sail late in 1859, en route to the States, or Panama, via Hilo, he had called upon Miss Makaeha to pay his final respects. She was one of the belles of Honolulu then and in the wildest flights of imagination, no one could have prophe-

sied that she would one day sit upon the throne.

The *Levant* arrived in Hilo and on a December day again sailed but was never heard from again. Her fate has always been a mystery. Only a piece of a spar which was found on the coast of the Island of Hawaii, and identified as a part of her equipment, seemed to indicate that she was caught in a terrible storm and foundered.

Lord Charles Beresford Takes Down American Minister's Shield

In 1865 the British frigate *Clio* visited Honolulu and took away as a passenger, former Queen Emma, relict of Kamehameha IV, who was leaving for England where she became a personal friend of Queen Victoria. She returned to Honolulu from the "coast" on the American warship *Vanderbilt,* as a guest of the American nation. While the *Clio* was at Honolulu, one of the middies took down the American minister's shield from in front of his office. It was traced to the *Clio* and demand was made for the culprit. Young Lord Charles Beresford, then a midshipman, stepped forward. It was demanded that he publicly replace the shield, which he did, while an artist sketched the incident. (See page XXXV, this issue).

Army Report on Hawaiian Base

Attempts to renew negotiations for a treaty of reciprocity between the United States and Hawaii were unsuccessful during the sixties, but both naval and army engineers and experts reviewed the Hawaiian situation, and voluminous reports were made on Pearl Harbor. Generals J. M. Schofield and B.S. Alexander, U. S. Army, sent to Honolulu to investigate conditions in the early seventies, reported:

> If the United States are ever to have a harbor of refuge and a naval station in the Hawaiian Islands in the event of war, the harbor must be prepared in advance by the removal of the Pearl Harbor bar. When war has begun, it will be too late to make this harbor available, and there is no other suitable harbor in the islands.

What they proposed has been done and more.

In 1872 Generals Schofield and Alexander, reporting to Secretary of War Belknap, said:

> An enemy could take position outside the entrance to the harbor and command the entire anchorage as well as the town of Honolulu itself. This harbor would, therefore, be of no use to us as a harbor of refuge in a war with a powerful maritime nation.

Fate was moving its fingers slowly but surely to give Hawaii her place in the sun, and under the American flag. Kamehameha V died in 1872 without naming a successor to the crown and was succeeded by Prince William Lunalilo, by election, and the latter died February 3, 1874, leaving no successor; once more the legislature was called upon to meet in extraordinary session to elect a sovereign.

Kalakaua Becomes King

In these early years of the seventies, American warships continued to be frequent visitors. There were disorders during the reign of Lunalilo and American warships were constantly on guard to protect American interests. The British warship *Tenedos* when seen steaming steadily for Honolulu by an American warship commander caused the latter to order a little more steam so that when the legislature met, it was fortunate that in the harbor of Honolulu were two Yankee ships of war, the *Tuscarora,* Commander Belknap, and the *Portsmouth,* Commander Skerrett.

The election was held on February 12, 1874, with two candidates, Queen Dowager Emma, pro-English, and David Kalakaua, backed by the Americans because of the known English proclivities of the widow of Kamehameha IV. By some strange result, the majority voted in favor of Kalakaua, the great crowd of Hawaiians outside the building expecting to hear the name of Emma announced as their next ruler. When the result was shouted from a window, the crowd was thunder-struck and, dynamically excited by emotion, attacked the parliament building, and despite opposition entered the hall, broke up the furniture, tore the records and threw the legislators out of the windows.

Friendliness of the Navy

Expecting trouble, the United States Minister, Henry A. Pierce, had previously arranged with the senior officer of the American squadron to provide armed assistance in such an event. As a result the officers and crews were prepared for trouble, the ships' boats were in the water all day, and the men were ready for instant landing,

a pre-arranged signal to be flown from a merchant ship at a wharf was looked for. It came. The men were in the boats in two minutes and within ten minutes were forcing the mob back from the government house; together with the crew of H.M.S. *Tenedos*, they restored order.

King Kalakaua practically owed his accession to the throne the following day to the glitter and power reflected from American bayonets.

KALAKAUA GOES TO WASHINGTON

The Americans, in the ascendancy, deemed the time opportune to bring forth the proposed Reciprocity Treaty. The king was willing to aid and to go to Washington. He departed for San Francisco on the American warship *Benicia*, as the guest of the American nation, and incidentally, because of the courtesies extended him by the captain and officers, conferred upon many of them royal decorations—the Order of Kamehameha and the newly instituted Order of Kalakaua.

King Kalakaua was the first monarch of a foreign power to visit the United States, arriving in Washington, early in 1875. He was received officially, even royally, met the President, and appeared upon the floor of Congress. His appeal, his picturesque personality, won American law-makers, and the treaty was put through and ratified by both countries in 1876 and put into operation in September. The King returned to Honolulu from San Francisco on the warship *Pensacola*.

SUGAR

Sugar was one of the dominant incentives toward the United States obtaining a foothold in Hawaii. America was negligent of opportunities for expanding her trade relations with the Islands until a steamship line was established to the English South Pacific colonies. American residents in Hawaii saw the balance of trade preparing to desert American ports for those of England. The election of Kalakaua was the keynote to renewed activity for the Reciprocity Treaty.

KING KALAKAUA AND THE NAVY

It was during this period of the seventies that American warships were *constantly* on guard. It was a merry period too for the officers of the ships. The flower of royalty was blossoming exotically. If the warship decks were fine dancing floors for the beauties of Honolulu, so also were the floors of the royal palace for the officers and their friends in town.

Those were giddy quarterdeck days for the Navy. They were gala days that admirals of today look back upon with emotion, for as middies and ensigns they were ideal days. The appointment to a ship that was stationed at Honolulu was the greatest and most desirable of appointments. Colonel C. P. Iaukea, of Hawaii, former chamberlain under King Kalakaua and Queen Liliuokalani, ambassador to several courts of Europe, the "Chesterfield of the Pacific," tells of such days and nights:

> We will take for example the visit of a squadron of American or French or British ships in the seventies and eighties. I was here much of the time at the court and in the eighties as chamberlain. You know, of course, there were nearly always naval ships in Honolulu harbor in those days. They were waiting, waiting for the apple to fall into somebody's lap.

The colonel smiles a bit, quite good-naturedly and continues:

> Well, let us say, a squadron of five American vessels arrived. The guns on Punch Bowl hill have fired the salute. All the town knows that foreign war vessels have arrived, that perhaps some notables are aboard. Immediately, a holiday spirit takes hold of the people. (We were always ready for that.)
>
> Sometime that day, sometimes not until the next, the royal carriage would swing out through the King Street gate of Iolani palace and down toward the landing, then approximately at the foot of Kaahumanu Street. (The ships in those days did not tie up anywhere, but were anchored in Navy Row, or if too large, just off the entrance to the channel.) There was a coachman driving two spanking horses and a pair of footmen up behind. The carriage was a barouche, opened.
>
> At the landing the admiral, or whatever the ranking officer of the squadron might be, with his ship commanders and other officers, would be taken in.
>
> The carriage, or carriages, would then dash back toward the palace through streets bordered with people. The crowds would be predominantly Hawaiian, and it was curious, but somewhat pleasant to see that the men usually took off their hats as the distinguished visitors drove by. Sentries at the palace gate would swing wide the two iron doors, locked in those days, and the carriages would rumble up the drive to the steps.
>
> On the side of the drive would be two lines of soldiers, of the Royal Guards. At the head of the stairs would be the court chamberlain. Finally the chamberlain would lead the visitors into the throne room (see page XLV), almost empty save for a few chairs near the walls, but about the throne itself there would stand a colorful group. King Kalakaua would be standing on the

upper step of the dais and perhaps Queen Kapiolani beside him. On either side would stand members of the cabinet, personal aides to the king and their respective wives. The officers advanced to within six feet of the dais, and the chamberlain would introduce them one by one according to rank, and there would be bows. Then would follow formal speeches, read as a usual thing, first by the visitor or visitors and a reply by the king. All this was purely formal, since even the speeches had been exchanged in advance.

That over, the reception became informal, the king usually stepping down from the dais and shaking hands; there was a general co-mingling of all persons in the room and later all would be conducted to the banquet hall, where light refreshments would be served, healths drunk, and general talk indulged in.

In a few days the king's carriage would drive to the landing with the king and suite and the admiral's barge would be awaiting His Majesty. The crew would man the oars and when the barge reached a point half way to the ship, the royal salute of twenty-one guns would boom out. The boat's crew would rest on their oars until the twenty-first gun had been fired—the barge would proceed. The king would go aboard with his staff and the royal ensign would be flying at the masthead all the time he remained on board. After a formality much like that at the palace, there would be the attendance upon refreshments, the wardroom furnishing champagne as well as food. These formal ceremonies over, there would follow a number of dinners, on board and at the palace, at the homes of prominent people, and friendships were sealed, which have lasted to this day.

It was the reign of the "Merry Monarch," the days of the *Vandalia, Tuscarora, Portsmouth, Mohican, Narragansett, Wachussetts, Lackawanna, Adams, Nipsic, Hartford, Benicia, Vanderbilt,* and many small ships, but none the less welcome; the days of the British ships *Champion, Reindeer, Espeigle,* and from time to time ships of France, Japan, Russia, Sweden, with now and then a crown prince, or other scion of royalty, or a distinguished peer, admiral, general, statesman, aboard.

Navy's Social Life in the Eighties and Nineties

Sometimes when *kamaaina* (old time) Honoluluans clean up shelves of old books or empty ancient camphor-wood chests, a flood of memories flows before them when there comes to view an ornate *Carte de Danse,* adorned with the familiar crown of the Hawaiian monarch resting upon an embroidered pillow and surrounded by ornamental borders of elaborate design and coloring.

It belonged to an age when the jessamine scent was borne on the breezes everywhere at eventide. At four o'clock in the afternoon the maidens strung *leis* of starry pearl like jessamine buds which gradually opened in their hair when they wore the fragrant decorations at a ball in the evening.

The little dance card was intended by the palace chamberlain to be of permanent value, and he probably possessed a romantic thought of days to come, when some of the belles and beaux of former days would recall the brilliant scene of the king and his queen viewing the formal throng in the throne room. The *Carte de Danse* was very much in evidence in the days of King Kalakaua, "Rex" as he was familiarly referred to, from 1874 to 1891. It was printed on heavy card and folded. Upon the cover was the date, say October 28, 1889, and upon the back cover, within a gorgeous border, was the crown above the familiar "KIK," surrounded by Kamehameha III's motto—"Ua mau ke ea o ka aina i ka pono" (The Life of the Land reposes in Righteousness).

But within! Ah, within! If the cover and date recall terpsichorean memories to a belle of that former day, now a matron past the half century of life, or a beau now become a formal man of business, a captain of industry possibly—the two narrow pages reveal a story of romance and adventure and perhaps of love—all that accompanied the brilliancy of a gay revel in the palace throne room, to which were added the sparkling of gold lace and the full dress uniforms of the officers of the men-of-war in the harbor.

In those days marine officers were described as "very gay fellows" and the navy men as "dashing."

The tiny ornate pages recall the music of Strauss, the "Blue Danube" and other ravishing waltzes, dreamy melodies to which couples danced for the sheer love of dancing. There was the old time lancers, such as was danced half and three-quarters of a century and much more ago in America and England, at the old army posts under the shadows of "Old Glory" and the "Union Jack," when old as well as young laughed and cantered to stentorian "right" and "left" commands of the "caller."

The first numbers at these royal balls given by King Kalakaua were the royal lancers, danced to the music of the white-coated musicians of the Royal Hawaiian

Military Band. To the matrons of today, the belles of yesterday, memories are conjured of such nights when an American warship was in port. An officer would ask for the *Carte de Danse* and he would pencil, for instance, "Barnett." Let's see, the Major General Barnett of recent years, of the old Marine Corps, but in 1889 he was dapper Lieutenant "Georgie" Barnett of the old wooden *Iroquois*. Then came the waltz, "One Thousand and One Nights." The polka (one has to say it twice to recall such a dance); "Dragoons"—and the name penciled, "Blandin." Jovial Ensign Blandin, of the *Alert* and *Nipsic*, who went down with the *Maine* in Havana harbor in 1898. There is the *"York"* with Paymaster Harry Webster's name attached. A favorite with the girls for his graceful dancing. Again, the waltz, whirled to the delightful music of the "Mikado," for Gilbert and Sullivan were then in the heydey of their popularity. Opposite is the name of "Hilary P. Jones," or more often just "Hilary," recently an admiral in command of the combined fleets, but then just an ensign, who arrived at Honolulu in the latter eighties with the battered *Nipsic* which arrived from Samoa after the hurricane disaster in Apia harbor. (Next month the Editor will print the story of the Samoan disaster). But Jones' fame in Honolulu rests upon the fact that he introduced the two-step and inducted the girls into its mysteries. And it may have been "Cole" of the *Iroquois* who participated in a 112-day cruise when that ship drifted helpless all over the Pacific. The matrons remember the schottische played to the tune of "Fifteen Dollars," and the waltz played to the divine melody of "The Gypsy Baron," a melody which is as much Hawaiian to the Hawaiians as almost any of their own. "The Gypsy Baron," with its dreamy entrancing air, made an Hawaiian moonlight one never to be forgotten, especially if it was a ball at the palace. In addition to the dash and gayety of the ships' officers, there was added the brilliance of the diplomatic corps, attachés and the ladies of the court.

The row boats of natives linked the warships with the landing and little parties went back and forth, merry and often larking. Immediately a vessel dropped anchor in the "Row" a telephone was put aboard and for hour after hour the belles of Honolulu conversed over the wire with the officers and made their engagements for dinner parties, horseback rides, dips at the beach, picnics and all manner of good times. Often the king would go aboard afternoons to attend the dances, attired in white flannels, ready at any time to sip the delightful drinks fashioned on board, for each warship prided herself on concocting the most tempting, subtle cocktail extant. The telephone "central" of those days said so much "taffy" was going over the wires that it was no wonder they got "sticky" and sometimes failed to work.

The finding of an old *Carte de Danse* today recalls pleasing memories of the old palace, the delightful old wooden warships and the splendid officers aboard them.

This brings to mind the poem which an American officer wrote as his vessel sailed out of Honolulu harbor, leaving behind the entrancing Hawaiian days and nights, the strum of the guitar and the tinkle of the ukulele. For he, too, was sad when he wrote:

> The breeze blows down Nuuanu's vale
> And wafts us o'er the tide;
> The jessamine scent borne on the wind
> Comes to us fainter from the shore;
> Nuuanu's vale is growing dim,
> The harbor's past—we're on the sea;
> Abeam are breakers rolling in
> Upon the beach at Waikiki;
> Leahi's peak looms 'gainst the sky,
> Fair Honolulu's lost to view.
> We'll oft recall these isles gone by
> And all the fair ones that we knew;
> Dark eyes their witching glances cast,
> Sweet voices sang in the lanai
> Of moonlit rays and hours passed
> 'Neath tropic skies in happiness.
> Fill up your glasses, let us drink
> To all our friends we've left behind;
> God speed to you and all your race,
> For dearer friends we'll never find.

But for one belle of other days, a matron of today, these verses, this toast of the Navy to Hawaii, would have been lost, for its only lodgment was upon the tablets of her memory and not recorded in men's books.

Isolation, after all, was the dominating charm of those days before the cable linked the islands with the outside world. Old time wooden warships remained a week, many weeks, months. The officers became a part of the island life, and made lifelong friendships. The reign of Kalakaua was one of joys and sorrows, of splendor and tawdriness, but a reign brilliant with the festivities at the palace, newly built for him in 1883. How many admirals of today re-

main who visited Honolulu as middies, ever afterwards to be stirred by sweet lingering memory when Hawaii was mentioned?

Ua ohi pakahi ia aku nei e ka po
The night has taken them one by one

Following her arrival, the stricken *Nipsic*, Captain Lyon, from Samoa, after the hurricane, with jury rudder and badly crippled, remained nine months on the quaint old marine railway while being repaired—a social rendezvous—dances, receptions, teas, dinners.

The Death of Kalakaua

Then came the day when King Kalakaua, late in November, 1890, in dire need of benefit to his health, departed for San Francisco as a royal guest in the U.S.S. *Charleston*. In the City of the Golden Gate, in January, 1891, the king died at the (old) Palace hotel. Again, the *Charleston* was assigned by the government to convey the remains back to Honolulu. The return of the king had been expected about that time, but not dead—and there was no cable or radio. The city was gayly decorated, arches and bright bunting placed across the streets, and *luaus* and festivities planned. As the *Charleston* rounded Diamond Head the watchers saw her flag half-masted and yards cockbilled. They new their king was aboard but not in life. Immediately the gay decorations were covered with black, the palace was redraped, and a nation mourned their beloved ruler. The *Charleston's* crew participated in the obsequies.

Liliuokalani Becomes Queen

Liliuokalani mounted the throne. Her policy was diametrically different to that of her brother. She was a dominating figure. It became apparent that important events were casting their shadows before. The *Boston*, Captain Wiltse, was stationed at Honolulu. The United States minister to the Islands, John H. Stevens, watching the trend of events, had written in 1892 to Washington that "The Hawaiian pear" was about ready to pluck. The legislature, after an extraordinarily long session, was prorogued on January 14, 1893, whereupon Queen Liliuokalani, returning to her palace, called her cabinet ministers to the Blue Room and announced she proposed immediately to promulgate a new constitution. They were astonished. She declared her people had petitioned for such a constitution to replace the one wrested from Kalakaua in 1887, under which many of the sovereign's personal prerogatives were taken. The ministers demurred, two of them hurrying down town to acquaint prominent American residents with the queen's intentions. The *Boston* had sailed for Hilo and there was no telegraph. The citizens organized and a request was made to the American minister for the landing force to come ashore for the protection of American lives and property. The *Boston* returned January 14 and on the 16th detachments of her crew were landed and occupied the Arlington hotel and grounds, remaining there several weeks. On January 17 the overthrow of the monarchy took place and the provisional government proclaimed. The queen was dethroned and Sanford B. Dole became president. (Editor's Note: See page 933.)

The Days of the Republic

When the Hawaiians, loyal to their queen and the monarchy, attempted in January, 1895, to restore Liliuokalani to the throne, the U.S.S. *Philadelphia* was in the harbor, but there was no need of her services.

In 1897 Hawaii acquired the enmity of Japan and an indemnity was demanded. The Japanese cruiser *Naniwa* entered the harbor, commanded by Captain Togo, later the national hero. An American warship was present but the indemnity, under advice from Washington, was paid and hostilities were averted.

The Spanish War broke out followed by the day when Commodore Dewey cabled from Manila: "Send Troops!"

A treaty of annexation had simmered in Congress for several years. Suddenly the American government saw the absolute need of a friendly harbor in mid-Pacific where her warships could call, and transports remain for a time to give the cramped troops opportunity to stretch their legs. Honolulu was that port.

The Annexation

A Joint Resolution of Annexation replaced the treaty document. The House of Representatives passed it followed by the Senate on July 6, 1898, and the following day President McKinley affixed his signature. The Hawaiian Islands were now a part of the United States.

On August 12, 1898, on the steps of the

former royal palace, in the presence of President Dole and officials of the republic, representatives of foreign nations, and landing forces from the *Philadelphia* and *Mohican*, the Hawaiian flag was lowered from the palace and the American flag hoisted in its place—to remain everlastingly.

But prior to that event, the van guard of warships and transports called at Honolulu en route from San Francisco to Manila. The old-time *Charleston* was the flagship of Admiral Glass.

THE PEARL HARBOR BASE

In 1894 the United States had made a survey of Pearl Harbor which was completed by a survey party assigned from the *Philadelphia* using launches and pulling cutters from the latter.

Preliminary work on the coral bar was started in 1900, but it was 1902 before the work was really under way. On January 11, 1905, the tiny gunboat *Petrel* steamed up the channel and anchored in the upper part of the lochs, herald of fleets to come flying the Stars and Stripes.

It was not until 1908 that Congress began to give close attention to appropriations for the naval station development. Work was then commenced on a 589-foot drydock. Admiralties at that time began to lay down greater warships and the plans were changed to a 1,000-foot dock. For years the contractors labored in digging the vast excavation under water. In February, 1913, the great dock under construction collapsed, due to hydrostatic pressure when the pumps began to reduce water in the caissons preparatory to sealing the bottom with concrete. The work of five years became nil in five minutes. Naval officials changed the plans. The bottom had to be "pinned down" by the driving of hundreds of piles and blocks of concrete lowered upon the wooden-studded foundation.

Pearl Harbor was formally dedicated August 21, 1919, by the Secretary of the Navy.

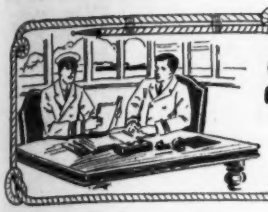
While Pearl Harbor was being developed, the battleship fleet in its cruise around the world, called at Honolulu in 1908. On December 14, 1911, the armored cruiser *California*, Captain Charles H. Harlow, flagship of the Pacific fleet, flying the flag of Rear Admiral Chauncey M. Thomas, commander-in-chief, steamed up Pearl River into the harbor, breaking a tricolored ribbon stretched across the channel, thus having the honor of being the first large vessel of the Navy to anchor in Pearl Harbor.

In May, 1899, Commander J. F. Merry was designated as commandant of the Honolulu Naval Station and was succeeded in 1902 by Rear Admiral William H. Whiting, who had been a junior officer aboard the *Benicia* when King Kalakaua went to San Francisco in 1874. Naval Officers Hugh Rodman and A. P. Niblack, who afterwards attained distinction in the World War, were on duty at Honolulu in 1902-3. Rear Admiral Silas Terry commanded from 1903 to 1904 and was succeeded by Captain Harry W. Lyon. Captain "Sam" Very came next, remaining until 1908, followed by Captain Corwin P. Rees until 1910. Rear Admiral W. C. Cowles served three years until 1913, followed for two years by Rear Admiral C. B. T. Moore. Rear Admiral C. J. Bousch served a year until 1916, being succeeded by Captain George R. Clark, the "World War Commandant," and another "War Commandant" was Rear Admiral R. M. Doyle, who took command July, 1918, remaining until May 15, 1919. Rear Admiral W. B. Fletcher took command in 1919, being followed by Rear Admiral John D. McDonald, who is now approaching retirement age.

The naval command in Hawaii is styled the 14th Naval District.

For a short time the Island of Midway, west of the Hawaiian group, now a cable station, was occupied by a force of marines from the old Honolulu naval station.

President Roosevelt was a deciding and forceful factor in having the Pearl Harbor work thrust ahead as a major program for the defense of the nation.



SECRETARY'S NOTES

Editing a Magazine

The World's Work changed its format in January this year and *The Scientific American* in July, the editor of the latter commenting on the great amount of planning and work involved. As ye editor has gone through the throes of changing the format of the PROCEEDINGS he cannot resist the temptation to quote from the July *Scientific American* in which the editor says:

> Well—here it is: the new *Scientific American;* how do you like it? . . . .
>
> We wonder whether you realize how much of a job it has been to get ready this new format? We shan't go into all the nightmare details here—it would require a whole article in itself; yes, more than that—but you may take it on faith that there is much more to it than meets the eye. Planning, planning, wrestling with styles and sizes of type, layout, makeup. Our layout editor has been doing flip-flops over it ever since January.

Likewise we cannot resist to quote from the editor of the May *World's Work:*

> The editing of a magazine is a great adventure—invariably joyous and frequently perilous. When an issue of the magazine goes out to the public an editor never knows what reaction to expect. He may stand up to receive a bouquet of flowers and be bowled over with a shower of bricks, or he may put on his tin hat to guard against expected bricks and instead be pelted with roses. If he receives neither bricks nor flowers he may be sure that his efforts did not hit any target and were read without any great interest.

"The Eagle and the Arrow"

Many, many years ago, human experience and human nature were summed up in one of Æsop's Fables as follows:

"An eagle was soaring through the air when suddenly it heard the whizz of an Arrow, and felt itself wounded to death. Slowly it fluttered down to the earth, with its life blood pouring out of it. Looking down upon the Arrow with which it had been pierced, it found that the shaft of the Arrow had been feathered with one of its own plumes. 'Alas!' it cried, as it died:

'WE OFTEN GIVE OUR ENEMIES THE MEANS FOR OUR OWN DESTRUCTION'."

"The Man and His Two Wives." Another Fable

"In the old days, when men were allowed to have many wives, a middle-aged man had one wife that was old and one that was young; each loved him very much, and desired to see him like herself. Now the man's hair was turning grey, which the young wife did not like, as it made him look too old for her husband. So every night she used to comb his hair and pick out the white ones. But the elder wife saw her husband growing grey with pleasure, for she did not like to be mistaken for his mother. So every morning she used to arrange his hair and pick out as many of the black ones as she could. The consequence was the man soon found himself entirely bald."

"YIELD TO ALL AND YOU WILL SOON HAVE NOTHING TO YIELD."

The Geneva Conference to Further Limit Naval Armaments

There were no surprises at the opening of the conference at Geneva as there were on the opening day of the Washington Conference in 1921. Each of the three powers seemed to have been prepared for the propositions put forth by the other two. The propositions put forth by Great Britain were forecast months ago and were referred to in these pages as long ago as December, 1925.

At that time we said "There is a distinct tendency among some British writers to hold to the theme that, while aircraft has not doomed the capital ship, nevertheless, in view of its cost . . . . a period is approaching wherein both Great Britain and the United States, as well as other signatory powers (to the Washington Conference), might well abolish the capital ship, because cruisers (more economical to build) could just as efficiently look after their respective national interests. It is perfectly obvious that, should the United States agree to do away with the capital ship and later on, perhaps, subscribe to the principle of doing away with all naval surface and undersea craft (which was the next obvious step), her naval power would rise or fall with the fortunes of her merchant marine. . . . . The entire question seems to hinge upon the size and efficiency of the American Merchant Marine." Two months ago in these pages it was stated "that Great Britain will propose a further limitation in capital ships and aircraft carriers . . . . and a limitation in the size of both cruisers and submarines . . . . and that every proposal . . . . will be in line" to make her *relatively* stronger due to her present superiority in cruisers and her preponderant merchant marine, the latter at "the beginning of hostilities . . . . potentially battleships or cruisers." Of course the relation between the steaming radius and naval bases is now well known to the man in the street.

There is one thought about battleships not usually dwelt upon and that is that aircraft, instead of making the dreadnaught obsolete, have made the former type more valuable and important than ever before because the *modern* battleship is the type of surface craft which holds the greatest promise of *effective defense* against overhead or underwater attack; at the present time these defensive qualities seem to have been attained to an effective degree.

It now remains to be seen if the three powers can get together for a real limitation upon the principles agreed upon at the Washington Conference, namely, the acceptance in principle of the ratios 5-5-3 for cruisers, destroyers, submarines and other auxiliary combatant craft to which Balfour agreed.

There was some misunderstanding at the beginning of the negotiations and it was common newspaper talk that the *British were unable to see* where America's need for cruisers arose as we had no long trade routes to defend; that most of our foreign commerce was carried in British bottoms *anyway;* and that we were having a hard time to get crews for our ships. Who gave out these interesting and humorous items to the press was not disclosed. "All I know is what I see in the papers," as Will Rogers says, but the British *seemed* greatly *surprised* at our claims to naval equality.

The British Were Surprised as Far Back as 1753

The Secretary while reading Rupert Hughes's *George Washington* a few nights ago ran across the following letter from Governor Dinwiddie to St. Pierre which Washington had been ordered to deliver to the latter in case he found the French encroaching upon the territory claimed by the Ohio Company. Here is an extract of the letter delivered by the Colonial Major Washington:

The lands upon the River Ohio in the Western Parts of the Colony of Virginia are so notoriously known to be the Property of the Crown of Great Britain; that it is a Matter of equal Concern and Surprize to me, to hear that a body of French Forces are erecting Fortresses, and making settlements upon that River, within his Majesty's Dominions. . . . .

It becomes my Duty to require your peaceable Departure; and that you would forbear prosecuting a Purpose so interruptive of Harmony and good Understanding, which his Majesty is desirous to continue and cultivate with the most Christian King. I will persuade myself you will receive and entertain Major Washington with the candour and Politenness natural to your Nation . . . . your most obedient Humble Servant, Robert Dinwiddie.

St. Pierre of course replied in some two hundred and more odd words of his most polite French, the substance of which, in a much more modern age, might have been expressed in at least one word of American slang.

Foreign Views of the Naval Armament Situation

A keen European observer several months ago summed up the situation something like this: "That however strongly the United States may feel that the British agreed in principle at the Washington Conference that her navy should be on a parity with that of the British, the latter undoubtedly have no such conception whatsoever. One knows the British case, of course, i. e., the importance of protecting trade routes, far-flung Empire, seven weeks food supply, etc., etc., and last, but decidedly not least, there is the fact that naval supremacy is a tradition dear to every Englishman, and incidentally one that has been very profitable in the past. That in itself means a lot over here. It is clear as can be that the British are not going to be argued out of this supremacy, or agreed out of it—not if they can help it, although they don't object to any apparent parity just so long as it isn't real!

"The wide difference between the two points of view lies in the fact that whereas the great body of Americans feel that the Washington Limitation of Arms Conference achieved a parity (in principle, at least) with Great Britain, the British look at it as having provided for a parity in battleships *only;* and they say quite frankly that whatever the talk may have been or whatever assumptions may have been made by those who wanted such a parity, the British never in the world would have agreed to any real parity. The slightly cynical say that all the Limitation of Arms Conference meant to the British was a means for them to get rid of America's nine biggest ships, though she is at liberty to describe it as suits her best! And now those nine biggest ships are gone, so they are no longer argument for the contrary view. Moreover, they are gone in such a manner that they will never be replaced. So that's that!

"The British are fed up on battleships, it seems, not because they don't like them, but because battleships are a rich man's weapon, and England is no longer rich. However, come what may, the British will keep up to America's strength in battleships even though they don't want to build any new ones to replace the old. They are preparing now to present a proposal for the further limitation of battleship tonnage. The reason for this is that they want to put every ha'penny the country can afford, into cruisers. As they have four old battleships coming up for replacement by two new ones before long, in accordance with the terms of the agreement, they see that to keep up to the present limit of tonnage would cost a lot of money (for replacements) that they would rather spend for cruisers. Of course they are not forced to make the replacements, but are only permitted to do so by the Treaty. Obviously, however, not to make the replacements when due would be to give America a superiority in the battleship class. So they mean to overcome this by suggest-

ing a further cut in battleship tonnage, thus keeping on a par with the United States, and at the same time saving the battleship replacement money for the construction of new cruisers, on which America is not on a par.

"The British realize that they can't base their drive against the submarine on the ground of "cruel and inhuman," etc., as that would only make people laugh and raise the old cry of "Perfidious Albion." But they mean to do everything in their power to get a limitation. They are keener about this than ever; especially so, it seems, because they have done some remarkable work of late with their own submarines. For example, one of the new ones recently fired a torpedo at target practice using trackless torpedoes, in which the submarine was not allowed to porpoise, or to come up to the surface, or to use the periscope in any way, for forty minutes before firing her torpedoes. The whole firing was done on listening tube data.

"The British do not want to apply the 5-5-3 to cruisers, or to set any limit that is likely to lead to a parity with any one. However, if maneuvered into setting a limit, they will try in the first place to make it a high one—on the theory that the American Congress wont furnish the money to build up to it in any case.

"There is no doubt that the great mass of the American people felt that parity with Great Britain was what they had got in return for their really very great sacrifices not only in the matter of battleships but also in the yielding of rights to fortify the Pacific possessions."

The Byrd Flight—Weather and Aerial Navigation

Was the Byrd flight a success? The answer depends upon whether it accomplished what it set out to do or failed. According to all published accounts, both before the flight and afterwards, it was for scientific research along the lines of aërial navigation and aërology, and to determine the possibilities of commercial voyages across the Atlantic.

There is an old saying that "all's well that ends well" and in view of the fact that none of the *America's* crew were injured to any serious extent, it is believed that their terrible experience, in the fog, wind and rain over France, has done more to aid and point out the handicaps of aviation than would have been the case had the weather been clear and fine. In the latter event nothing would have been learned as to actual difficulties of navigation in foul and foggy weather when making a landfall after a trans-Atlantic air passage, nor of the seemingly impossibility of making a safe landing during fog after a landfall has been made. Had the *America* encountered fair weather and landed at Le Bourget according to schedule the world would have shrugged its shoulders and contented itself with saying "Why not?" and have added, "Didn't Colonel Lindbergh do that all alone and with a single engined motor?" And the world would have been right so far as proving that the Atlantic could be crossed by an airplane from New York to Paris.

As for aërial navigation Byrd demonstrated that in bad weather it is possible with skillful navigation to take an airplane from New York to Europe and this too when for nineteen hours of the trip he saw neither land nor water. He did this on dead reckoning with very little assistance from his drift indicator and aided by the receipt of radio compass bearings. When nearing the French coast he was fortunate in that the weather cleared sufficiently for him to pick up and see Ushant. There is no doubt but that he was glad to see land where expected, and he would have been easier in mind if the radio direction finding methods had been more highly developed.

As for navigation in the air under fair weather conditions, where celestial observations

are possible, there is no more difficulty than for surface ships, if the bubble sextant is used and modern methods of air navigation are employed. An expert navigator like Byrd could work out a "sight" in four minutes or less. It is true the air navigator might be handicapped by lack of space and by having to work quickly, but these conditions obtain, more or less, on large and small surface ships, so these particular factors are not of great importance.

As regards obtaining a "fix" in the air by radio bearings there is no fundamental difference, so far as principle is concerned, between the ship in the air and the one on the surface, although the former must have a sufficiently powerful and efficient radio set for the work.

In foul or foggy weather, however, there are considerable differences when approaching land or making a landfall—all the differences in the world, for the surface ship not only has the benefit of knowledge of charted currents, but she can slow, take soundings, stop, or anchor, and wait, if necessary, for the weather to clear. None of these are available to the airplane.

If the entire passage across the Atlantic is made in fog and gales—not unlikely so far as weather is concerned—the airplane cannot see anything with which to determine its drift nor to determine its ground speed, both factors absolutely necessary to successful navigation whether afloat or in the air, unless accurate and reliable radio direction finding stations are available and there are as yet "no such birds" despite several very remarkable voyages by their aid.

Viewed in the above light, and not considering the daring, courage and skill of the crew, which have been acclaimed by every one, the flight must be considered a success for it has pointed out

(*a*) the necessity for increased efficiency of instruments to obtain radio compass bearings in aircraft;

(*b*) the need for more accurate and reliable aircraft compasses;

(*c*) the necessity for aërological information over a large expanse of water—a charting of the air as has been done for sea—a very much larger undertaking than the latter in many respects;

(*d*) the necessity of providing a *safe* method of making a landfall in any kind of weather, and

(*e*) above all the *absolute necessity* of being able to make a *safe* landing under any weather conditions.

Of the above the last is the most important problem and will be the most difficult to solve. How soon can it be done?

Two Old Books

For the information of the Institute's readers, two old books, *Naval Monument* by Abel Bowen, and *Statistical and Chronological History of the United States Navy 1775-1907* by Robert W. Neeser, have been presented to the Institute's library by Mr. Daniel V. Gallery, an associate member of the Institute.

Wanted—A Copy of Luce's Seamanship

Lieutenant-Commander H. G. Bradbury, U.S.C.G., of the Coast Guard Destroyer *Trippe,* New London, Connecticut, is most anxious to obtain a copy of *Luce's Seamanship.* If any of our readers know of a copy that may be obtained please communicate directly with him at the above address stating price, etc.

Who Will Be the Pathfinder of the Air?

Several weeks ago while motoring through the Shenandoah Valley, the Secretary visited the monument erected a few years ago by the State of Virginia, in the beautiful Goshen Pass on the banks of the North Anna, near Lexington, to the memory of her distinguished son, who did so much for the safe navigation of the ships of the world. On a bronze tablet was the inscription

MATTHEW FONTAINE MAURY

Pathfinder of the Seas
The Genius who first Snatched
From Ocean & Atmosphere
The Secret of their Laws.

Born January 14th, 1806
Died at Lexington, Va., February 1st, 1873
Carried through Goshen Pass To His Final
Resting Place in Richmond, Virginia.

Every Mariner
For Countless Ages
As he takes his Chart to Shape
His course across the Seas,
Will think of thee

His Inspiration Holy Writ

Psalms 8 & 107, Verses 8, 23, & 24
Ecclesiastes Chap. 1, Verse 8
A Tribute by his Native State
Virginia
1923

His Last Words
"Carry My Body Through The
Pass When the Rhododendron
is in Bloom."

All the world, save his own countrymen, long ago recognized his work and accorded him every honor for charting the seas; today the latter are seeking to do just honor to the distinguished American naval officer, who also founded our Hydrographic Office and our Naval Observatory. He also had the vision to make the first recommendations which led to the establishment of the Weather Bureau in virtually its present organization!

Is there another American naval officer today who can do the charting of the Air as Maury did the Seas?

What Is a Merchant Ship?

To the list of questions being asked in such popular books as *Answer This One* and *Ask Me Another* there will probably be a few more added after the Geneva Conference. One such question which was not satisfactorily answered by any nation during the World War, nor at the Washington Conference, nor since, was, "What is a merchant ship?" Mr. Root said in 1922 that everyone knew, but perhaps he was in a hurry, and pleading for

the success of outlawing certain activities of the submarine as it was employed in the last war. He meant of course that "the man in the street" knew. Our own State Department had several definitions before our entry into the war and other nations were no better off.

For the benefit of our lay readers it might be stated that some of the points around which there have been arguments are: Was the ship (*a*) the property of the state; (*b*) charted only for the voyage; (*c*) armed with one gun, two guns, three guns, etc.; (*d*) an armed ship if she had in her hold one or more guns, although not mounted, were capable of being quickly mounted; (*e*) armed with a gun forward or aft; (*f*) armed with a gun of 3-, 4-, 5- or 6-inch caliber; (*g*) when overhauled and visited, on a course which indicated she was on belligerent or unneutral service, etc. Many more points are involved but enough have been enumerated to show why the French and Italians at the Washington Conference made reservations even if every one did know what a merchant ship was.

Hector C. Bywater Says American Proposals Were Modest and Just

In an article in the Baltimore *Sun* of July 9, contributed by its British naval expert, Hector C. Bywater, under date of June 24, there appears the following illuminating statement:

"Although the Geneva Conference has been in session only five days, its chances of success can now be weighed with some degree of assurance. Britain has made reservations inconsistent with the 5-5-3 principle and Japan has definitely rejected it.

"Whether the British demand for unlimited tonnage in light cruisers will be persisted in is uncertain. Critics here are already reminding the Admiralty that this country is not rich enough to sustain a shipbuilding race with America, and if the latter is in earnest in claiming complete naval parity such a race is bound to develop. But the issue is not confined to Britain and America.

"Would America be content with a 5-5 ratio with the British Navy, or is she equally resolved to achieve a two-fifths plurality over Japan? The American delegation has so far kept its own counsel on both points, but the next open session may bring enlightenment.

"As always happens when some big question of policy is hedged about with technicalities, the true significance of the proposals made at Geneva are but dimly understood by the lay public. Even those who claim to possess expert knowledge have been misled. Thus, the British Navy League, in a manifesto published yesterday, makes the following comment:

> We trust that the total tonnage limitations suggested by the United States Government will never be agreed to by our delegates. The effect would be that Great Britain would have to scrap a large number of ships, while America would start building new ones.

"It is obvious that the authors of this manifesto have not taken the trouble to explore the facts.

"The maximum tonnage ratios which America has proposed for herself and the British Empire, respectively, are: cruisers, 300,000; destroyers, 250,000; submarines, 90,000. Let us compare these proposed aggregates with the present-day establishments.

"Counting only such ships as are already in service, actually building, or ordered, and excluding obsolete vessels, the British Empire now has about 330,000 tons of cruisers and America about 160,000 tons. Britain, therefore, would have to discard 30,000 tons of existing ships, while America would be free to build an additional 140,000 tons. Viewed in this way, the proposal seems very unfair to Britain. But, in fact, British cruisers to-

taling considerably more than 30,000 tons have been already marked down for the scrap-heap, and so would in any case disappear at an early date. On the other hand, judging from the recent attitude of Congress toward naval appropriations, it does not seem very probable that the United States would proceed forthwith to build eighteen to twenty new ships in order to bring its cruiser tonnage up to the British level.

"Be that as it may, the Navy League's fear lest acceptance of the American proposal would compel us to scrap 'a large number of ships' is seen to be unfounded, so far as cruisers are concerned.

"As regards destroyers and submarines, the boot is on the other leg. Our present force of destroyers does not exceed 215,000 tons, while America's tonnage is far above the 250,000 mark. There is an even greater disparity in submarine tonnages, the American total being very much larger than the British. In these two classes, therefore, America would have to engage in very drastic scrapping operations, while Britain, so far from having to part with a single boat, would have a big margin in hand for new construction. Finally, the American suggestion of lumping cruisers and destroyers together during the transition period would absolve Britain from the necessity of scrapping a single cruiser if she did not wish to do so.

"For these reasons most British observers who have studied the question are convinced that the American proposals are fair and acceptable. If the maximum quota of cruisers were raised to 350,000 tons the last practical objection would disappear, for the additional 50,000 tons would give us the margin required to bring our cruiser fleet to within measurable distance of the standard specified by the Admiralty as being necessary for the protection of inter-empire trade routes. In effect, therefore, a matter of 50,000 extra tons of cruisers is all that stands in the way of a complete agreement between Britain and America on the basic question of ratios.

"If America made this concession it is more than probable that public opinion here, once it had grasped the inwardness of the proposition, would overcome Admiralty resistance and peremptorily demand a settlement. It is a fact worth recording that British opinion as a whole is not averse to the principle of all-around naval parity with America. Such objections as have been raised are due to the idea, which our naval interests have carefully fostered, that America would not consent to a standard of strength commensurate with our vital needs. That idea should be dispelled by the proposals which America has now put forward.

"As I have said, the cruiser quota might well be increased by one-sixth, but the destroyer and submarine totals are entirely adequate. The British Empire stands to gain much and lose nothing by accepting the American plan, subject only to the minor amendment indicated.

"Japan's attitude on the ratio question is certainly a complicating factor, but the difficulty need not prove insuperable. Those who regard the 5-5-3 formula as sacrosanct may be horrified at the suggestion that a surplus of defensive tonnage, such as small cruisers and coastal submarines, might be conceded to Japan. If Britain agreed to this there is no apparent reason why America should withhold consent. The way would then be open for an agreement between the three powers on the all-important question of relative strength, thus eliminating once and for all the menace of competitive building and its dangerous political sequelæ.

"Over here we do not understand why American experts should be so hostile to the British scheme for reducing the size and cost of warships, nor is it clear why Britain

should be suspected of an ulterior motive. The theory that Britain, thanks to her chain of naval bases, is less in need of big warships than America, breaks down on examination. During the World War, when one of our main preoccupations was the guarding of the South Atlantic trade routes, we were forced to establish an emergency base at a rocky islet off the coast of Brazil.

"In a future war with a strong European power we should probably find the Mediterranean untenable, in which case our only safe line of communication with the East would be around the Cape of Good Hope.

"It is evident, therefore, that the British Navy would not by any means be free from the strategic handicap resulting from a reduction in the size and steaming endurance of future warships."

The "Baltimore Sun's" Editorial

In the Baltimore *Sun,* July 9, there appeared the following editorial on the views of Hector C. Bywater:

UNOFFICIAL BRITISH VIEWS

It has been difficult for those who have followed British affairs since the war to understand why the Naval Conference at Geneva should have been endangered, as it has been, by the extraordinary British claims for cruisers.

The British of all classes, it is true, would like to have a certain supremacy over the United States at sea. That is natural enough, for they had it for years and their pride calls for it. The British of all classes also think, it is probable, that their need for cruisers is greater than ours, on a purely defensive basis, since when all is said about relative perils it is a fact that they can be starved and we cannot be. And it is certainly easy to understand how both of these considerations would powerfully move a Conservative Government in which the dyed-in-the-wool, stiff-necked Tory element had gained the mastery.

But when equality in naval strength had been "conceded" by the Conservative British delegation in principle, after consideration of all the broad aspects of the relationships between the two nations, it seemed that the sensible thing to do was clearly to determine a reasonable limit for cruisers. Parity without a limit inevitably meant parity reached by a wild building race. And parity at anything above a reasonable limit also meant a wild building race. And yet the British, after having belatedly said publicly that they would agree to parity, waited a few days and then, according to repeated report, came forward with the suggestion of 600,000 tons as the limit, which would be equivalent, in fact, to having no limit at all, so far as checking a race for immense armaments is concerned.

Today the *Sun* prints from its special naval correspondent in London, Mr. Hector C. Bywater, an Englishman, an article which demonstrates that intelligent unofficial opinion in Great Britain is not unanimous in supporting such a program. It shows, on the contrary, there is well-advised and reasonable British opinion which regards it in the same light in which the people of the United States regard it. Mr. Bywater declares not only that 350,000 tons of cruisers would be enough for Britain—that is, only 50,000 more than the United States first offered and 250,000 less than the British delegation has asked—but explains that 350,000 would bring the British navy within measureable distance of the Admiralty's own estimates of needs. More, he holds that if America offered 350,000 tons, and the British public understood the offer, the Government would be compelled to accept.

Thus, it appears that the grave danger in which the Naval Conference has been placed by British demands is due to an official policy which, in Mr. Bywater's opinion, is at variance with the will of the British public. It is a case in which professional British navalists and ultra-Conservative British politicians, he thinks, have departed from the will of the British people and are playing the game that suits their own training and temperament. And that makes possible understanding of the British position. which has been so amazing to those who recall the great row in London when Mr. Churchill, as Chancellor of the Exchequer, reluctantly bowed to the Admiralty two years ago and provided money to start five cruisers, and who recall the persistent protest throughout the country against Mr. Baldwin's revival of the Singapore naval base scheme, which Ramsay MacDonald had halted.

. . . . . .

The question now is whether the British Admiralty and the British Tories will prevail in the final determination of British policy at Geneva, or the British people. The decision may be fateful.

Hawaii Under the First American Flag

Mr. Albert Pierce Taylor's account in this issue of "The Navy in Hawaii" does not mention the virtual American protectorate that existed from January 17 to April 1, 1893. At the time of the overthrow of the government of Queen Liliuokalani, the American flag was hoisted over the Hawaiian Islands as Judge Sanford B. Dole assumed the office of Provisional President and read the proclamation abrogating the monarchy and formally establishing a Provisional Government instead, "to exist until terms of union with the United States can be negotiated and agreed upon."

It will be remembered that President Cleveland's administration, then in power, did not look with favor upon the proposed annexation and Commissioner Blount was appointed to make an investigation. The Comissioner upon arrival soon favored the royalists and ordered the Navy to haul down the American flag which was done April 1 (a significant date) and subsequently Blount reported to Cleveland that the activities of the U.S.S. *Boston* and of Resident Minister Stevens had been responsible for the revolution. Our government took steps to restore the queen to her throne but they came to naught, chiefly due to her own actions.

What became of this American flag?

The story is told by the then Lieutenant Lucien Young of the *Boston's* landing force in his book, *The Real Hawaii.* This book, by the way, was written in 1893, principally to counteract the Blount report but the Secretary of the Navy, at that time, refused him permission to publish it; after the Spanish-American War, Secretary Long gave permission for its publication. It makes very interesting reading.

Young states that "One of the most gratifying spectacles of the occasion (referring to the annexation on August 12, 1898), especially to those Americans who witnessed our flag being hauled down by Blount, was the rehoisting of the *same* flag on the *same* flag-pole, over the *same* building, simultaneously with the lowering of the Hawaiian flag on the Executive Building. I was enabled to obtain this flag immediately after it was hauled down five years previously and carefully preserved it, fully believing that sooner or later there would be a call for it to go up again." He gave the flag to Mr. L. A. Thurston in May, 1898, with the request that it be re-hoisted "on the *same* flag-staff from which it had been lowered. Mr. Thurston communicated with President McKinley, and he approved of the proposition, as did President Dole; so the result was, the flag that Blount hauled down rose proudly to its old position."

Those interested in the history of the islands from the viewpoint of American foreign policy would do well to read Mahan's *The Interest of America in Sea Power, Present and Future, Lessons of the War with Spain, and Other Articles,* and *The Problems of Asia.*

The Hawaiian Islands—Navigation

The article in this issue of the PROCEEDINGS by Admiral Rodman entitled "The Sacred Calabash" should be of interest to every one at this time in view of the successful navigation of the Army aviators to the Sandwich Islands. [At this writing the editor has not seen anything from Will Rogers or from George Rothwell Brown in the *Washington Post,* in his column "Post-Scripts," but no doubt we shall soon hear that while the aviators missed their sandwiches they did not miss the islands.]

The Rodman story makes interesting reading and tells of the successful navigation of the Hawaiian canoes hundreds of years ago over an equal distance, strange enough, of

2,400 miles, although their voyages were in the general north and south direction. The Hawaiians upon the northward return journey from Tahiti always made for a point several hundred miles to the *eastward* of their native islands and then, much like the Army flyers, made their *westing* on latitude from celestial observations of Polaris. How this was done (and could be done today with an airplane) makes an entertaining tale. Read it.

Five Years in Turkey

The Naval Institute's English translation of General Liman von Sanders' book, *Five Years in Turkey,* came off the press last month and should be read by everyone interested in those operations of the World War which took place in the Near East from the Caucasus to Arabia. Von Sanders, a general of cavalry, was Chief of the German Military Mission to Turkey when the war broke out and was placed in command at the Dardanelles. His account gives the political background immediately before and at the opening of the war from the viewpoint of the German Commander-in-Chief of Turkey's forces in the Gallipoli Campaign, and was written from notes made by him at the time during the "fog of war" and hence are particularly valuable to the student of war.

As a great deal of interest is being displayed at this time in Arabia and Palestine due to the publication of books dealing with the Allenby campaign and of Colonel Lawrence's *Revolt in the Desert,* the von Sanders' book likewise will be found interesting inasmuch as he was the opposing leader to the British and Arabs from March until October, 1918. The present president of Turkey, Mustaphal Kemal, was an unknown colonel under von Sanders at the Dardanelles and made a name for himself as a successful commander. Later this Turkish officer was again with von Sanders on the Palestine front and attained the rank of general.

The difficulties von Sanders had with Enver Pasha and his own brother officers of the Great German General Staff in Germany are fully recounted and make interesting reading—yet he was never recalled and remained in Turkey five years. His success at the Dardanelles is sufficient to make him one of the outstanding generals of the World War —in successfully opposing the largest amphibious operations in history in which the combined forces totaled nearly three-quarters of a million men.

Evans, Honolulu and the Panama Republic

Another Navy incident relative to Hawaii might be referred to. In the fall of 1903 the vessels of the U. S. Asiatic fleet had been dispersed to Japanese waters for recreation, leave and overhaul, when the Commander-in-Chief, Rear Admiral Robley D. Evans, his flagship then the *Kentucky,* at Kobe, received an inquiry by cable from the Navy Department as to how soon he could sail with three battleships and four cruisers for Honolulu. The youngsters in the junior officers' mess at the time speculated as to whether President Roosevelt for diplomatic reasons was seeking to get the major portion of the large vessels out of Far Eastern waters before the opening of the expected Russo-Japanese war or whether the ships were on their way to Panama in connection with the proposed canal.

Evans replied, "In twenty-four hours" whereupon he was ordered to sail for Honolulu as soon as vessels had been docked, coaled and provisioned, and await further instructions. Despite the fact that the vessels of the fleet had been dispersed, ten days from the first cable inquiry the *New Orleans, Albany, Cincinnati,* and *Raleigh* under the command of Rear Admiral Cooper sailed from Yokohama followed two days later by the three battleships *Kentucky, Wisconsin* and *Oregon* under Admiral Evans. Everyone said the bat-

tleships could not steam that distance, particularly the old *Oregon*. Evans said they could and not only that but that the *Oregon* would be making thirteen knots before arrival. He was right. The afternoon before Kauai was sighted, Admiral Cooper's command was fallen in with and the seven vessels arrived at Honolulu together, the three battleships having averaged twelve and one half knots per hour, making the trip in twelve days—a battleship steaming record for those days.

The fleet never went to Panama but remained in Honolulu until after New Year's, and the midshipmen of those days (now captains) and the lieutenants (now admirals) will never forget the hospitality showered upon them, nor the merry occasions ashore at the Moana Hotel, Waikiki, and the then newly built Alexander Young Hotel. In addition to private luncheons and dinners aboard ship the fleet returned the welcome with a large farewell ball on the decks of the *Kentucky* and *Wisconsin* and then returned to the Philippines just prior to the outbreak of war in the Far East.

Tin Hats That there are styles in fighting men's steel helmets, as in feminine millinery, is apparent from an article in the *China Press*, a Shanghai newspaper, which gives an account of a dress review of the Fourth Regiment, United States Marines, at the race track at Shanghai.

Concerning the review the *China Press* says:

> Came then the first battalion, every button glistening, uniforms policed to immaculate cleanliness, bayonets shining and "tin hats" newly Ducoed. Following—the color guard! Then machine gun units, the second battalion, more machine guns and other regimental detachments.

Pyroxylin lacquered automobiles have ceased to be a novelty in the United States, but the use of the finish on the Marines' headgear has struck a new note in tin hat fashions.

Membership New members not previously published:

Ames, A. T.
Abbott, H. T.
Allen, J. R., Lieut. (CC) U.S.N.
Allen, W. G., Ens. U.S.N.
Beason, C. B.
Boeing, W. E.
Bent, H. T.
Brock, W. B., Jr.
Brooks, H. W.
Belmont, Perry
Brazer, G. H.
Burden, J. A.
Briggs, T. C.
Brown, H. H.
Bailey, G. W.
Brogan, J. J.
Briggs, W. W.
Bassett, J. C.
Blake, F. T.
Bradshaw, R. C., Radioman, U.S.N.R.
Cornett, Gardner
Carney, J. R.
Cowling, J. G.
Colburn, E. F.
Copley, I. C.
DeValin, C. M., Captain (MC) U.S.N.
Dvorak, August
Delano, P. H.
Eric, Howard
Erikson, O.
Ferguson, J. A., Jr.
Fuller, E. I.
Forbes, Allan
Fuller, G. C.
Gephart, Valentine
Goodwin, H. W.
Gould, T. W.
Grunsky, C. E.
Gibbons, H. A.
Gauntlett, F. J.
Gminder, Otto
Garfield, H. A.
Gillett, Lowry
Green, Joshua
Hudson, T. C.
Henderson, Wm., Jr.
Harding, H. J.
Huebner, W. B.
Hannah, A. W.
Haslet, P. E.
Hyatt, J. K., Ens. U.S.N.
Hatch, C. F.
Hillyer, C. N.
Halliburton, S. S., Chf. Mach., U.S.N.
Ingham, Bertha A., Mrs.
Johnson, F. L., Lieut., U.S.N.
Johnson, N. C.
Jacobsen, G. H., Bosn., U.S.C.G.
Jennings, C. G.
Jackson, P. L.
King, L. M., Ens., U.S.N.
Kettner, William